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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Ronald W. Hall

Title: Programmable Headset and Programming Appartus and Method

Docket No.: 56382US002 (1002.0008US01)
Filed: December 19, 2000

Serial No.: 09/740,524
Due Date: December 31, 2005 (Saturday before Monday, Jan. 2 which was a Federal Holiday)

Examiner: Andrew R. Graham
Group Art Unit: 2644

MS Appeal Brief
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

We are transmitting herewith the following attached items (as indicated with an "X"):

X A return postcard and this transmittal document.
X An Appeal Brief.
X A check for $500 for the fee for an Appeal Brief.

By Katherine M. DeVries Smith
Reg. No. 42,157
KDS

Customer Number: 57,557

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Kate DeVries Smith
Name

Signature

(GENERAL)

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	)	
	)	
Ronald W. Hall	)	Examiner: Andrew R. Graham
	)	
Serial No.: 09/740,524	)	Group Art Unit: 2644
	)	
Filed: December 19, 2000	)	Docket: 56382US002 (1002.0008US01)

For: Programmable Headset and Programming Appartus and Method

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APPELLANTS' BRIEF ON APPEAL

Mail Stop Appeal Brief- Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

The Appeal Brief is presented in support of the Notice of Appeal to the Board of Patent Appeals and Interferences, filed on October 31, 2005, from the Final Rejection of claims 23-40 of the above-identified application, as set forth in the Final Office Action mailed on June 30, 2005.

A check in the amount of $500 which represents the requisite fee set forth in 37 C.F.R. § 1.17 is enclosed herewith. The Appellants respectfully request consideration and reversal of the Examiner's rejections of pending claims. Appellants note that an Oral Hearing is hereby requested, and the fee for the hearing will be paid within two months of the date of the Examiner's Answer.

1. REAL PARTY IN INTEREST

The Real Parties of Interest are 3M Company, formerly Minnesota Mining and Manufacturing Company, and 3M Innovative Properties Company, both Delaware corporations.

2. RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences known to appellant, the appellant's legal representative, or assignee which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal for the above-referenced patent application.

3. STATUS OF THE CLAIMS

Claims 23-40 are pending while claims 1-22 have been canceled. All of the pending claims 23-40 have been rejected. Claims 23, 32 and 35 are independent claims.

Claims 23-25, 27-30, 32, 35, and 37-40 were rejected as being obvious over "3M Headset System Model C960 Operating Instructions" ("3M Model C960") in view of Ruppert et al. (U. S. Pat. No. 6,236,969) ("Ruppert").

Claim 26 was rejected as being obvious over 3M Model C960 in view of Ruppert and further in view of Takahashi et al. (U.S. Pat. No. 6,525,854) ("Takahashi"). Claim 31 was rejected as being obvious over 3M Model C960 in view of Ruppert and Takahashi and further in view of well-known prior art.

Claims 33-34 and 36 were rejected as being obvious over 3M Model C960 in view of Ruppert and further in view of Lee et al. (U.S. Pat. No. 5,247,380) ("Lee").

All of the rejections depend on the combination of 3M Model C960 and Ruppert.

4. STATUS OF AMENDMENTS

No amendments were filed after the final Office Action was mailed on June 30, 2005.

5. SUMMARY OF THE INVENTION

The invention relates to a headset that has an infrared detector and is configured to receive a signal containing the operation frequency for the headset via the infrared detector. The headset is therefore more reliable than prior art headsets that received a similar signal via a cable connection. This invention is expressed in independent claims 23, 32, and 35. Claim 23 relates to a system including a programmable headset and a programming unit. Claim 32 relates to a method of programming a headset. Claim 35 relates to a programmable headset.

Background

The headsets described in the application are frequently used in the quick service (a.k.a. fast food) restaurant industry by employees to take orders at a drive-through window. In the banking industry, these types of headsets are also common to allow bank tellers to communicate with customers in drive-through lanes. Also, in retail stores or warehouses, the headsets allow employees to communicate with each other. (Application, page 1, lines 9-16.)

When a headset system is initially installed, the headsets undergo a programming step. This programming step also takes place periodically throughout the life of the headset. During this programming step, an operating program is downloaded to the headset. The operating program establishes several basic settings of the headset, including the operating frequency of the headset's radio transmitter and receiver. (Application, page 9, lines 1-3.)

In prior art systems, a cable was used to download the operating program to the headset. As discussed in the application, the cable jacks on prior art headsets and prior art base stations sometimes failed because they became contaminated with food substances, such as grease. (Application, page 2, lines 1-3.) Also, rough use by employees sometimes caused the pins in the cable jacks to be damaged. (Application, page 2, lines 1-3.) These failures resulted in service calls and unwanted downtime for the headsets. The present invention avoids the problems associated with the prior art cable jacks by taking two steps: incorporating an infrared port into the headset **and** using the infrared port to provide programming data to the headset.

Claim 23 (Headset and Programming Unit) and Claim 35 (Headset)

The headset of claims 23 and 35 includes a transmitter, a receiver and a headset signal processing device for transmitting and receiving audible communications via radio frequency signal. (Application, page 2, lines 11-12.) The headset also includes an infrared light detector which is used to receive programming signals. (Application, page 4, lines 11-14.) The programming signals are used to set certain operating parameters of the headset, such as operating frequencies for the transmitter and receiver.

An example of a headset as referenced in the independent claims is pictured below in Illustration A, which includes Figures 1 and 4 of the Application. As shown in Figure 1, an infrared window 145 covers the infrared light detector of the headset, but allows infrared signals to pass through it.

Illustration A: Figures 1, 4 and 6 of the Application

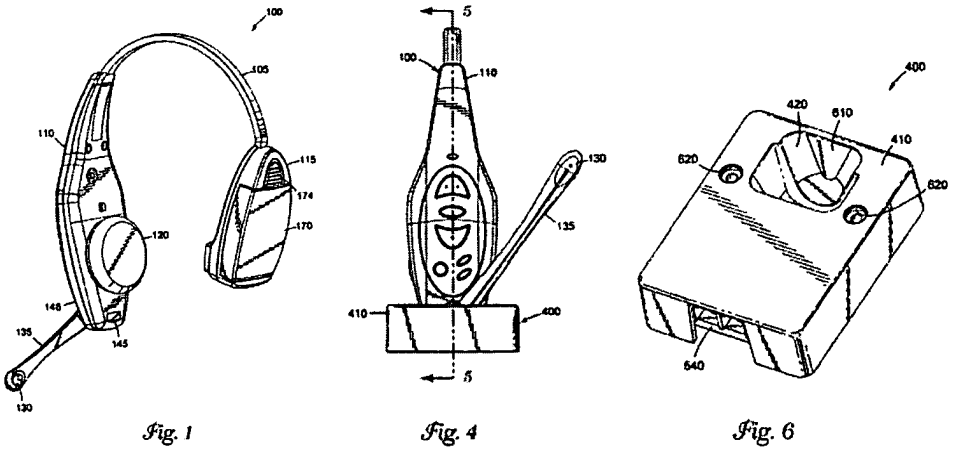

Fig. 1 *Fig. 4* *Fig. 6*

The programming unit of claim 23 includes an infrared light emitter, a signal processing device, and a cradle for receiving a portion of the headset. (Application, page 8, lines 4-5 and 27, and page 10, lines 24-26.) An example of a programming unit 400 is shown in Figures 4 and 6 of the Application, which are reproduced in Illustration An above. The portion of the headset 100 that includes the infrared window 145 fits into a cradle 420 defined in the housing 410. (Application, page 8, lines 26-28.) The programming unit's signal processing device 706 is configured to output a signal containing the operation frequency for the transmitter and the receiver for transmission by the programming unit's infrared light emitter 520 to the headset's infrared light

detector 530. (See Illustration B below for a block diagram illustrating these components.) As a result, an infrared signal between the programming unit 400 and the headset 100 can set the operating frequency and other settings of the transmitter and receiver of the headset. (Application, page 8, line 29 – page 9, line 3.)

Figure 7 of the application is reproduced below as Illustration B and shows a block diagram of a headset assembly 100, programming station 400 and base station 700 of the present invention. (Application, page 10, lines 23-24.) The headset assembly 100 includes an infrared detector emitter 530 connected to a signal processing unit (PU) 705. The programming station 400 includes an infrared light transmission and receiving element 520 and a signal processing unit (PU) 706. (Application, page 10, lines 23-24.)

Illustration B: Figure 7 of the Application

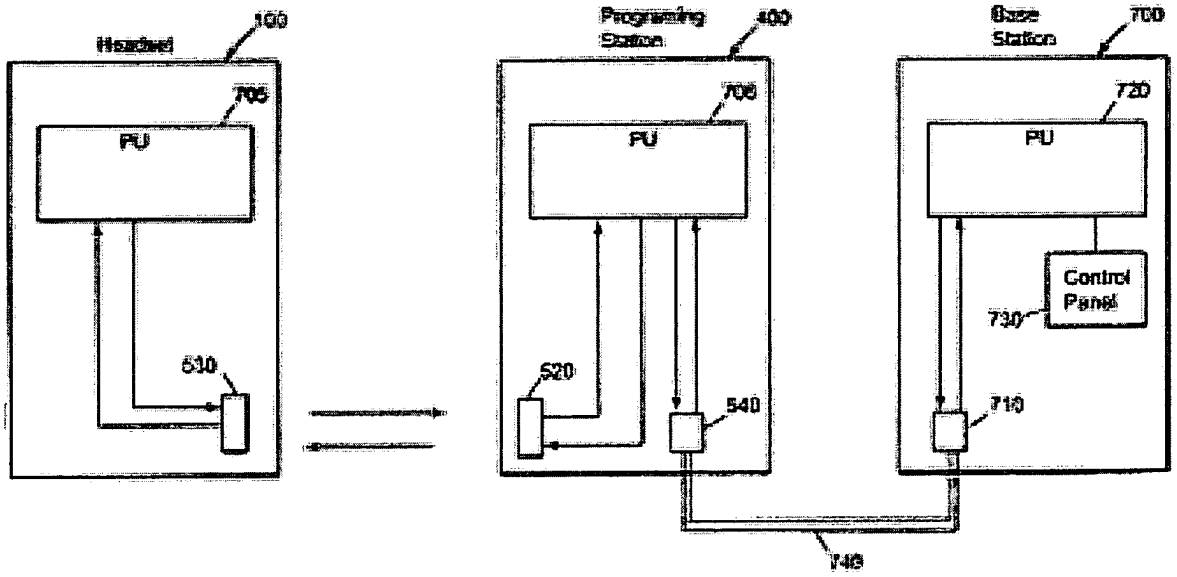

Fig. 7

Claim 32

Claim 35 relates to a method for programming a headset. Reference will be made to Figure 7 to illustrate an example of the components referenced in claim 35. One step of claim 35 is positioning a detector portion of a headset 100 near a programming station 400, where the headset 100 includes an infrared light detector 530 for receiving signals from a programming station infrared light emitter 520. (Application, page 11, lines 18-

22.) Another step of claim 35 is transmitting an IR signal from the programming station 400 to the headset 100. (Application, page 12, lines 9-10.) Another step is setting the operating frequency of the transmitter and receiver of the headset in response to the signal. (Application, page 12, lines 12-16.)

6. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Claims 23-25, 27-30, 32, 35, and 37-40 were rejected as being obvious over "3M Headset System Model C960 Operating Instructions" ("3M Manual") in view of Ruppert et al. (U. S. Pat. No. 6,236,969) ("Ruppert"). Other rejections are applied under 35 U.S.C. 103 to the dependent claims, but all of the rejections depend on the combination of Ruppert and 3M Model C960 to teach the independent claims.

The issues presented for review are:

A. Whether claim 23 is patentable over 3M Model C960 in view of Ruppert.

B. Whether claim 32 is patentable over 3M Model C960 in view of Ruppert.

C. Whether claim 35 is patentable over 3M Model C960 in view of Ruppert.

7. ARGUMENT: RUPPERT COMBINED WITH 3M MODEL C960 DOES NOT TEACH USING AN IR PORT TO PROVIDE AN OPERATING FREQUENCY TO THE HEADSET

A. Claim 23

Claim 23 relates to a system including more than one programmable headset and a programming unit and recites in part:

> wherein the programming unit signal processing device is configured to output a signal to the programming unit infrared light emitter containing the operation frequency for the transmitter and the receiver for transmission by the programming unit infrared light emitter to the headset infrared light detector.

The programming unit is configured to output a signal containing an operation frequency for the transmitter and the receiver for transmission by an infrared light emitter of the programming unit to an infrared light detector of the headset. As a result, an infrared signal between the programming unit and the headset can set the operating frequency of the transmitter and receiver.

Claim 23 was rejected as being obvious over "3M Headset System Model C960 Operating Instructions" (hereinafter "3M Model C960") in view of Ruppert et al., U. S. Pat. No. 6,236,969 (hereinafter "Ruppert"). The 3M Model C960 discloses a headset communication system including a headset and a base station. The headset includes a "Headset Programming Jack" that can be connected to the base station to "allow the headset to be programmed to the same channel as the base station." (3M Model C960, p. 5.)

Ruppert describes a communication system including a telephone headset 10 and a base unit 70. (Ruppert, Col. 3, line 57 and Col. 6, line 12.) In Ruppert, the base unit 70 is described as having an IR interface 88 and the telephone headset 10 is described as having an IR interface 89. (Ruppert, Col. 6, line 65, Col. 7, lines 8-21 and Col. 10, lines 16-34 and 49-63.) However, Ruppert does not include any teaching that an IR communication from the base unit 70 can contain the operation frequency for the transmitter and the receiver for transmission to the telephone headset's IR interface 89.

The Final Office Action mailed June 30, 2005 and Advisory Action mailed October 18, 2005 argue that Ruppert transmits data via IR and therefore it would be obvious to modify the system taught in 3M Model C960 to include the IR communication interface of Ruppert. (Final Office Action, page 7, first full paragraph.) The cited motivation is to enable "additional frequency independent wireless communication to be conducted through the headset along with the radio communications of the system." (Final Office Action, page 7, first full paragraph.) The Final Office Action goes on to state, "Such a port would have been particularly useful for two way data transfer between the radio-communications enabled headset and base station of 3M and devices such as a computer, printer, ATM or other peripheral device." (Final Office Action, page 7, first full paragraph.)

However, this argument ignores that two significant modifications to the 3M Model C960 are required before it meets the limitations of claim 23. First, an IR port would need to be added. Second, the base station would need to be configured to send a signal via the infrared port containing the operation frequency. The Final Office Action discusses the first modification but not the second.

In the Response to the Final Office Action, it was pointed out that there was no motivation provided for this second modification. The Advisory Action elaborated on the rejection, but did not state a motivation for the second modification, stating that the claim limitation is "at least considered obvious in view of the *data* transmitted in the system of 3M and the *manner* of the data transmission in the system of Ruppert." (Advisory Action, page 3, end of first paragraph, emphasis in original.)

Applicants respectfully submit that the rejection of claim 23 must be withdrawn because no motivation is provided for this second modification. Therefore the alleged combination does not meet the claim limitations of claim 23. The argued combination of 3M Model C960 and Ruppert takes one step toward the limitations of claim 23, but fails to teach the addition of at least the following feature: that the system is configured to send an IR signal to the headset that contains the operating frequency.

In fact, Applicants respectfully submit that the rejection cannot take this second necessary step because the only motivation for this step is impermissible hindsight.

A claimed invention must be considered as a whole. One must avoid hindsight

and step back in time just before the invention was made into the mind of a hypothetical "Person of Ordinary Skill in the Art" who does not know the invention. In re Dembiczak, 175 F.3d, 994, 999; 50 U.S.P.Q.2d 1614, 1618 (Fed. Cir. 1999). The phrase, "at the time the invention was made" is important to consider to guard against applying hindsight. Id. To avoid the "powerful attraction" of hindsight requires a rigorous application of showing the teaching or motivation to combine prior art references. Id.

In Dembiczak, the appellants' claims in their patent application were directed toward a large trash bag made of orange plastic that when filled with trash or leaves would resemble a Halloween-style pumpkin or jack-o'-lantern. The claims specified "facial indicia" on the outer surface of the bag. Id. at 995; 1615. Among the references cited by the examiner in an obviousness rejection under 35 U.S.C. 103 were "conventional" plastic lawn bags and a children's book describing a method of making a "paper bag pumpkin" by stuffing a bag with newspapers, painting it orange, and then painting on facial features with black paint.

The Federal Circuit emphasized that obviousness rejections require a clear and particular showing of the teaching or motivation to combine prior art references, which most often comes from the teachings of the pertinent references, and must be supported by actual evidence. Id. at 999; 1618. The Federal Circuit also stated that close adherence to the methodology for analyzing 103 rejections is "especially important in the case of less technologically complex inventions, where the very ease with which the invention can be understood may prompt one 'to fall victim to the insidious effect of a hindsight syndrome wherein that which only the inventor taught is used against its teacher.'" Id. at 999; 1617, quoting W.L. Gore & Assocs., Inc. v. Garlock, Inc., 721 F.2d 1540; 220 U.S.P.Q. 303 (Fed. Cir. 1983).

Applicants respectfully submit that Dembiczak applied to the present application requires that an explicit motivation be provided for why one of ordinary skill in the art would modify the base station of the 3M Model C960 to transmit a signal containing an operation frequency via an IR signal. Because this explicit motivation is not set forth, it is not possible to discern if the rejection rests on hindsight. Therefore, Applicants respectfully submit that the rejection of claim 23 should be withdrawn and the claim

should be allowed. In addition, dependent claims 24-31 incorporate all the limitations of claim 23 and should also be allowed.

B. Claim 32

Regarding claim 32, neither Ruppert nor 3M Model C960 teach the following steps of claim 32:

> transmitting an infrared light signal from the programming station infrared light emitter to the headset infrared detector, where the signal contains information regarding the operating frequency of the transmitter and receiver of the headset; and
>
> setting the operating frequency of the transmitter and receiver of the headset in response to the signal.

As discussed above, Ruppert does not describe that an IR signal from its base unit will contain information regarding the operating frequency of the transmitter and receiver of the headset. 3M Model C960 also does not teach that an IR signal from its base station will contain information regarding the operating frequency of the transmitter and receiver of the headset. The alleged combination of Ruppert and 3M Model C960 does not provide a motivation for sending this information via IR signal. Also, neither Ruppert nor 3M Model C960 discloses the step of setting the operating frequency of the transmitter and receiver in response to receiving an IR signal. While the Final Office Action and Advisory Action discuss motivation for adding an IR port to 3M Model C960, neither document discusses a motivation modifying the 3M Model C960 system to perform the two steps of claim 32 reproduced above. Accordingly, claim 32 is patentable over the cited references. The dependent claims 33-34 are also patentable for at least the same reasons.

C. Claim 35

Claim 35 specifies that "the operation frequency for the transmitter and receiver of the headset is set by a signal received by the headset infrared light detector." Regarding claim 35, neither Ruppert nor 3M Model C960 teach a headset where the operation frequency for the transmitter and receiver of the headset is determined by a signal received by the headset infrared light detector. As discussed in more detail above, the Final Rejection and Advisory Action do not provide motivation for modifying the 3M Model C960 system to include this feature. Accordingly, claim 35 is patentable over the

cited references. The dependent claims 36-40 are also patentable for at least the same reasons.

D. Summary

Applicants respectfully request that the pending claims be allowed for the reasons set forth herein. If the Examiner believes that a telephone conference would advance the prosecution of this application, the Examiner is invited to telephone the undersigned at 612.746.4784.

Respectfully submitted,

RONALD W. HALL

By his Representatives,

PAULY, DEVRIES SMITH & DEFFNER, L.L.C.
900 IDS Center
80 S. Eighth Street
Minneapolis, MN 55402

Date: January 3, 2005

By _____
Katherine M. DeVries Smith
Reg. No. 42,157

CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: Mail Stop Appeal Brief, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 3rd day of January, 2006.

Name: Katherine DeVries Smith

Signature: _____

APPENDIX I – THE CLAIMS ON APPEAL

23. A system of programmable headsets comprising:

(a) a plurality of programmable headsets, wherein each headset comprises:

(i) a headband; and

(ii) an electronics housing including:

(1) a headset infrared light detector arranged to receive infrared light signals, convert the infrared light signals into electric signals and supply the electric signals to an output, the headset infrared light detector being located in a detector portion of the electronics housing;

(2) a headset signal processing device with an input coupled to the output of the headset infrared light detector for processing the electric signals supplied by the headset infrared light detector;

(3) a transmitter operably connected to the headset signal processing device; and

(4) a receiver operably connected to the headset signal processing device; and

(b) a programming unit comprising:

(i) a programming unit signal processing device with an output; and

(ii) a programming unit infrared light emitter operable connected to the output of the programming unit signal processing device;

(iii) wherein the programming unit signal processing device is configured to output a signal to the programming unit infrared light emitter containing the operation frequency for the transmitter and the receiver for transmission by the programming unit infrared light emitter to the headset infrared light detector.

24. The system of programmable headsets of claim 23,

(a) wherein the electronics housing of the headset further comprises a headset infrared light emitter operably connected to an output of the headset signal processing unit; and

(b) wherein the programming unit further comprises a programming unit infrared

light detector arranged to receive infrared light signals, convert the received infrared light signals into electric signals and supply the electric signals to an input of the programming unit signal processing device.

25. The system of programmable headsets of claim 23,

(a) wherein the detector portion of the electronics housing is located at an end of the electronics housing.

26. The system of programmable headsets of claim 23,

(a) wherein the programming unit further comprises a cradle for receiving the detector portion of the headset;

(b) wherein the programming unit infrared light emitter is positioned within the programming unit for infrared light communication with the headset infrared light detector when the detector portion is positioned in the cradle.

(c) wherein the detector portion of the headset and the cradle include at least a window of infrared light transparent material.

27. The headset of claim 23 wherein the headband includes a speaker and a microphone, wherein the headband is operably coupled to the electronics housing by a wire connection.

28. The headset of claim 23 wherein the electronics housing is attached to the headband and the electronics housing includes a speaker and a microphone.

29. The system of claim 23 further comprising a base unit connected to the programming unit, the base unit comprising a control panel.

30. The system of claim 23 wherein the programming unit further comprises a control panel.

31. The system of claim 23 wherein the programming unit is wall mountable.

32. A method of programming a headset comprising:

positioning a detector portion of a headset near a programming station, where the headset comprises a headset infrared light detector for receiving signals from a programming station infrared light emitter, wherein the headset includes a transmitter and receiver;

transmitting an infrared light signal from the programming station infrared light emitter to the headset infrared detector, where the signal contains information regarding the operating frequency for the transmitter and receiver of the headset;

setting the operating frequency of the transmitter and receiver of the headset in response to the signal.

33. The method of claim 32 further comprising:

indicating a ready condition for receiving a programming signal of the headset by transmitting an infrared light signal from a headset infrared detector emitter to a programming station infrared detector.

34. The method of claim 33 wherein the step of indicating a ready condition further comprises turning the headset on.

35. A programmable headset comprising:

(i) a headband; and

(ii) an electronics housing including:

(a) a headset infrared light detector arranged to receive infrared light signals, convert the infrared light signals into electric signals and supply the electric signals to an output, the headset infrared light detector being located in a detector portion of the electronics housing;

(b) a headset signal processing device with an input coupled to the output of the headset infrared light detector for processing the electric signals supplied by the headset infrared light detector;

(c) a transmitter operably connected to the headset signal processing device; and

(d) a receiver operably connected to the headset signal processing device;

(e) wherein the operation frequency for the transmitter and receiver of the headset is set by a signal received by the headset infrared light detector.

36. The programmable headset of claim 35,

(a) wherein the electronics housing of the headset further comprises a headset infrared light emitter operably connected to an output of the headset signal processing unit, wherein the headset infrared light emitter is configured to transmit a ready signal to indicate that the headset is ready to receive the infrared signal indicating the frequency of operation of the transmitter and receiver.

37. The programmable headset of claim 35,

(a) wherein the detector portion of the electronics housing is located at an end of the electronics housing.

38. The programmable headset of claim 35,

(b) wherein the detector portion of the headset includes at least a window of infrared light transparent material.

39. The headset of claim 35 wherein the headband includes a speaker and a microphone, wherein the headband is operably coupled to the electronics housing by a wire connection.

40. The headset of claim 35 wherein the electronics housing is attached to the headband and the electronics housing includes a speaker and a microphone.

APPENDIX II – EVIDENCE APPENDIX

A. Office Actions and Amendments

- **a.** Final Office Action mailed June 30, 2005
- **b.** Advisory Action mailed October 18, 2005

B. References Relied Upon by the Examiner

- **a.** 3M Headset System Model C960 Operating Instructions" ("3M Model C960")
- **b.** U. S. Pat. No. 6,236,969 to Ruppert et al.

UNITED STATES PATENT AND TRADEMARK OFFICE

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/740,524	12/19/2000	Ronald W. Hall	7780.650US01 (3M REF.0011 ✓	5167

32692 7590 06/30/2005

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KDS

EXAMINER	
GRAHAM, ANDREW R	

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8M FR 6 Month: December 30, 2005 } cjm

OV

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applic:)
	09/740,524	HALL ET AL.
	Examiner	Art Unit
	Andrew Graham	2644

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 March 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *23-40* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) *23-40* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *4/28/05*.
4) ☒ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement (IDS) submitted on April 28, 2005 has been considered by the examiner.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. **Claims 23-25, 27-30, 32, 35, and 37-40** are rejected under 35 U.S.C. 103(a) as being unpatentable over "3M Headset Intercom System Model C960 Operating Instructions" in view of Ruppert et al (USPN 6236969). Hereafter, "3M Headset Intercom System Model C960 Operating Instructions" will be referred to as "3M" and "Ruppert et al" will be referred to as "Ruppert".

3M discloses a headset communication system for a dual lane food service environment, wherein in one mode of operation a user is able to communicate with two different service lanes from a single headset.

Specifically regarding Claim 23, 3M specifies:

A system of programmable headsets ("one base station and one or more headsets", page 1, lines 15-16) comprising:

(a) a plurality of programmable headsets ("one or more headsets", page 1, lines 15-16),

wherein each headset (page 2, "Headset") comprises:

(i) a headband (band connected to and adjusted by 15, left figure, Figure 5, page 5, lines 20-24); and

(ii) an electronics housing (left figure, Figure 5, casing for circuitry and connectors 1-11) including:

(3) a transmitter ("2-way", page iii, line 3; inherent in "transceiver" of "transceiver housing", page 11, line 7) operably connected to the headset signal processing device (e.g., "microprocessor", page 23, lines 2-3, in further view of Ruppert discussed below);

(4) a receiver ("2-way", page iii, line 3; inherent in "transceiver" of "transceiver housing", page 11, line 7) operably connected to the headset signal processing device (e.g., "microprocessor", page 23, lines 2-3, in further view of Ruppert discussed below);

(b) a programming unit ("base station," with Channel Select Button", page 22) comprising

(i) a programming unit signal processing device with an output (circuitry in base station converts a depressed Channel Select switch into a "new channel selection" to be 'read' into microprocessor and changes indicator; "output" is signal applied through base station programming jack after new channel selected and read into microprocessor of base station; pages 22-23); and

(iii) wherein the programming unit signal processing device (circuitry of base station, comprising at least interconnection of Channel Select Button, microprocessor, Reset Switch, Programming Jack, and indicators) is configured to output a signal (via Base Programming Jack) containing the operation frequency ("channel") for the transmitter and the receiver (programming comprises changing channels or radio frequencies; pages iii, lines 2-4; page 1, lines 3-5; page 22, lines 1-3; headset is programmed to same channel as base station, page 23, line 13; new channel selection is first determined in base station, page 23, lines 1-2; programming cable connection and turning headset ON then result in headset being "now programmed" to same channel as base station, causing audible tones, page 23, lines 6-14; connection of cable after selection of channel and reading new channel into microprocessor of base station implies signal is transmitted from base station to headset via the cable; as this connection/signal results in the headset being "now programmed to the same channel as the base station", implicit is that the cable conducts information regarding the new channel selection to the headset; also considered in view of Ruppert, as discussed below, which denotes the passing of an electrical signal to control circuitry, which includes RF tuning control capabilities, col. 10, lines 16-26)

However, 3m does not specify:

a headset infrared light detector arranged to receive infrared light signals, convert the infrared light signals into electric signals and supply the electric signals to an output, the headset

infrared light detector being located in a detector portion of the electronics housing;

a headset signal processing device with an input coupled to the output of the headset infrared light detector for processing the electric signals supplied by the headset infrared light detector;

a programming unit infrared light emitter operably connected to the output of the programming unit signal processing device

wherein the programming unit signal processing device is configured to output a signal to the programming unit infrared light emitter to the headset infrared light detector

Ruppert teaches a communication system comprising a headset and a base station with a variety of features, one of which is means to transmit and receive information via both infrared and radio frequency signals. The IR communication interfaces are intended for data transfer between the headset and the base station as well as other devices (col. 6, lines 63-66 and col. 7 lines 13-21). Control signals input through the headset (10) are disclosed as being able to alter the tuning of the RF circuitry as well as effect data transmission over the I/R interface (col. 10, lines 23-32).

Specifically regarding Claim 1, Ruppert discloses:

a headband (12)(col. 3, lines 56-60); and

an electronics housing (14,16)(col. 3, lines 58-65) including:

a headset infrared light detector (89) arranged to receive infrared light signals (from 88), convert the infrared light signals into electric signals (inherent for use of infrared signal by standard

integrated circuit board implementation of electronics components(30 or 32) (col. 4, lines 60-65)) and supply the electric signals to an output (into 32 or to 97)(col. 7, lines 2-4 and 61-64),

the headset infrared light detector (89) being located in a detector portion (located on the underside of mouthpiece (16) or variety of locations on headset (col. 7, lines 1-12));

a headset signal processing device (32 or combination of 32 and 97) with an input coupled to the output of the headset infrared light detector (89) for processing the electric signals supplied by the headset infrared light detector(89)(col. 7, lines 2-4; col. 10, lines 56-58);

(3) a transmitter (integrated into 30) operably connected to the headset signal processing device(32)(col. 7, lines 23-30);

(4) a receiver (integrated into 30) operably connected to the headset signal processing device (32)(col. 7, lines 23-30);

(ii) a programming unit infrared light emitter (88) operably connected to the output of the programming unit signal processing device (circuitry that apples data from serial cable 86 to IR interface, col. 6, lines 60-66, in view of circuitry interconnecting at least Channel Select Switch, microprocessor, and Base Programming Jack of 3M)(col. 6, lines 64-66; Figure 3, both of Ruppert)

(iii) wherein the programming unit signal processing device (circuitry interconnecting 86 and 88) is configured to output a signal to the programming unit infrared light emitter (88, in view of programming jack of 3M) (col. 6, lines 63-64)... for transmission by the

programming unit infrared light emitter (88 in 70) to the headset infrared light detector (89)(col. 7, lines 2-4)

To one of ordinary skill in the art at the time the invention was made, it would have been obvious to include the IR communication interface of Ruppert into the headset of the applicant's admitted prior art. The motivation behind such a modification would have been that such a port would have enabled additional, frequency independent wireless communication to be conducted through the headset along with the radio communications of the system. Such a port would have been particularly useful for two way data transfer between the radio-communications enabled headset and base station of 3M and devices such as a computer, printer, ATM, or other peripheral device. Ruppert also notes an IR transmission scheme that would have enabled secure transmissions to be made. Ruppert also teaches that a single base station may issue broadcast communications over the I/R band, which suggests that implementing such I/R interface on the base unit and headsets of 3M would have enabled multiple headsets to access transmitted data.

Regarding **Claim 24**, 3m in view of Ruppert discloses:

(a) wherein the electronics housing (comprising 14,16 of Ruppert) of the headset further comprises a headset infrared light emitter (part of 89) operably connected to an output of the headset signal processing unit (comprising at least 32) (part of 89 in view of the IR ports (88,89) enabling full duplex communication between the headset (10) and other data transmission devices, along with the

communications between the headset (10) and base unit (70); col. 7, lines 16-21 and col. 10, lines 26-34 and 54-59, all of Ruppert)

(b) wherein the programming unit further comprises a programming unit infrared light detector (part of 88 of Ruppert) arranged to receive infrared light signals (duplex communication, col. 7, lines 16-18; col. 10, lines 29-32), convert the received infrared light signals into electric signals (implicit, as data is sent through serial interface 86) and supply the electric signals to an input of the programming unit signal processing device (computer of Ruppert in view of microprocessor and interconnecting circuitry of 3M)(full duplex communication between the headset (10) and computer which may be connected to base unit (70); col. 7, lines 16-21 and col. 10, lines 26-34 and 54-59, all of Ruppert)

Regarding **Claim 25**, Ruppert discloses that multiple IR ports in various locations may be provided on the device, and the port depicted (88) is located on the bottom of the mouthpiece (16) towards the speaker end of the electronics housing (14) (col. 7, lines 8-11). These teachings read on "the detector portion of the electronics housing is located at an end of the electronics housing".

Regarding **Claim 27**, the mouthpiece (16) of Ruppert's invention includes a microphone (18) and a speaker (20), which reads on "the headband includes a speaker and a microphone" (col. 4, lines 10-12). Ruppert also discloses that electrical connections (28,29,50,60) exist between the electronics housing and such components contained on the headband (col. 4, lines 40-44; col. 5, lines 21-37). These physical

contacts and the physical, electricity-conducting paths to which they correspond, such as illustrated for (28), read on "the headband is operably connected coupled to the electronics housing by a wire connection".

Regarding **Claim 28**, the mouthpiece (16) of the component enclosing portion (14,16) of Ruppert's invention includes a microphone (18) and a speaker (20) and is connected through another electronics housing (14) to the headband (12), which reads on "the electronics housing is attached to the headband" and "includes a speaker and a microphone" (col. 4, lines 10-22 and Figure 1). The electronics housing of 3M is also connected to the headset (Figure 5, page 4).

Regarding **Claim 29**, the system of 3M includes circuitry for receiving channel selection inputs, reading the new selected channel into a microprocessor, and transmitting a signal through a programming cable jack in one housing. The system of Ruppert, however, involves a separate data generating and processing device, a computer, and transmitting component, base unit (70). Ruppert discloses that serial data is passed through the base unit (70) by the infrared port (88), wherein the serial data is obtained through a serial data port (86) from a data source such as a computer (col. 6, lines 60-63). In view of the processing performed in the system of 3M, the computer or devices externally connected through the telephone jack in the system of Ruppert reads on ""further comprising a base unit connected to the programming unit" (col. 10, lines 29-32). Computers and conventional telephone devices are substantially well known in the art to include

physical input consoles or controls, such as keyboards or keypads, which reads on "the base unit comprising a control panel".

Regarding **Claim 30**, the base unit (70) of Ruppert includes volume control switches (76,77), as does the base station of 3M among other controls, which reads on "the programming unit further comprises a control panel" (col. 6, lines 20-22 of Ruppert; pages 22-23 and Figure 21-23 of 3M).

Regarding **Claim 32**, 3M in view of Ruppert teaches:

A method of programming a headset comprising (page 23 of 3M):

positioning a detector portion (14, 16 of Ruppert with mounted 89 thereon) of a headset (10)(headset of 3M in view of 10 of Ruppert) near a programming station (base station of 3M in view of base unit 70 of Ruppert)(Figure 22 of 3M, and col. 10, lines 26-39, at least "near" by virtue of 89 on 10 and 10 used with 70 in office),

where the headset (10) comprises a headset infrared light detector (89) for receiving signals from a programming station infrared light emitter (88)(col. 6, lines 60-67; col. 7, lines 1-4 of Ruppert),

wherein the headset includes a transmitter and receiver (col. 7, lines 22-30 of Ruppert);

transmitting an infrared light signal from the programming station infrared light emitter (88 on base unit 70 of Ruppert in view of base programming jack on base station of 3M) to the headset infrared detector (89 on headset of Ruppert in view of programming

jack on headset of 3M, Figure 23)(col. 6, lines 63-66 of Ruppert; page 23 of 3M),

where the signal contains information regarding the operating frequency for the transmitter and receiver of the headset (after establishing new channel selection in base station of 3M, the selection is 'read' into microprocessor of base station of 3M, and then programming cable is connected to headset to program new channel to headset, pages 22-23 of 3M; as new channel selection can be represented in electronic form by virtue of 'readable' into microprocessor, and programming of headset occurs after connection of programming cable, implicit is the sending of signal from base station to headset, wherein signal includes information regarding new channel selection; this signal is considered in view of data transfer in system of Ruppert, as cited above)

setting the operating frequency of the transmitter and receiver of the headset in response to the signal (function of cable connection resulting in "headset is now programmed to the same channel as base station", page 23 of 3M; in further view of use of electronic signal in Ruppert used to tune RF frequency, col. 10, lines 16-26).

Regarding **Claim 35** please refer above to the components cited in the rejection of the similar limitations of Claims 23 and 32, particularly the rejection of set (a) limitations of Claim 23 and the "setting" limitation of Claim 32.

Regarding **Claim 37**, please refer above to the grounds of rejection cited in relation to the similar limitations of Claim 25.

Regarding **Claim 38**, please refer above to the grounds of rejection cited in relation to the similar limitations of part(c) of Claim 26.

Regarding **Claim 39**, please refer above to the grounds of rejection cited in relation to the similar limitations of Claim 27.

Regarding **Claim 40**, please refer above to the grounds of rejection cited in relation to the similar limitations of Claim 28.

3. Claims 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over 3M in view of Ruppert as applied above, and further in view of Takahashi et al (USPN 6525854). Hereafter, "Takahashi et al" will be referred to as "Takahashi".

As detailed above, 3M discloses a headset communication system for a dual lane food service environment, wherein in one mode of operation a user is able to communicate with two lanes from a single headset. Ruppert discloses a communication system comprising a headset and a base station, along with the means to transmit and receive information via both infrared and radio frequency signals. Specifically regarding Claim 26, Figure 3 of Ruppert illustrates the base unit (70), which includes a support recess (81) that reads on "a cradle for receiving the detector portion of the headset" (col. 6, lines 27-41). This base unit (70) includes a serial interface jack (86), through which an attached computer may provide and receive

serial data (col. 6, lines 60-63). 3M discloses the programming of the headset through the use of a base station and programming cable (page 3; page 22, Figure 22). The combination of a base unit (70) and a computer of Ruppert in two units for transmitting, in view of the particular programming functions and signal output included in the base station of the system of 3M, as noted above in regards to Claim 23, collectively reads on "a programming unit". The IR interface ports (88,89) of Ruppert are illustrated as defined panels on the headset (10) and base (70) of Ruppert, the construction of such a well-known, infrared-passing component reading on "the detector portion of the headset and the cradle include at least a window of infrared transparent material" (Figures 1 and 3 of Ruppert).

As can be seen in Figure 3 of Ruppert, the IR port (88) of the base station (70) is located within the support recess (81). Ruppert also discloses that the IR ports of the headset may numerously and variously be positioned (col. 7, lines 8-11).

However, 3M in view of Ruppert does not clearly specify:

- that the infrared light emitter is positioned for infrared light communication with the headset light detector when the detector portion is positioned in the cradle

Takahashi teaches a portable radio communication device with an infrared communication function that enables wireless data transmission.

Specifically regarding **Claim 26**, Takahashi discloses:

infrared light emitter (21B) positioned for infrared light communication with the headset light detector (10A) when the detector portion is positioned in the cradle (col. 7, lines 9-10; col. 8, lines 16-17 and 40-52; col. 9, lines 41-48)

To one of ordinary skill in the art at the time the invention was made, it would have been obvious to align the IR ports in the headset and cradle of 3M in view of Ruppert in a manner that would have enabled IR communication while the headset is positioned in the cradle, as is disclosed by Takahashi. The motivation behind such a modification would have been that such an arrangement would have enabled IR communication to take place between the cradle and headset when operating conditions for the headset allow the headset to be placed in the cradle. Such operating conditions would have included charging of the battery, as suggested by Ruppert, hands-free operation of the radio telephone, as suggested and enabled by Takahashi, or while the headset is being stored or otherwise not in use, as would have been recognized by one of ordinary skill in the art.

4. **Claim 31** is rejected under 35 U.S.C. 103 (a) as being unpatentable over 3M in view of Ruppert and Takahashi as applied above, and in further view of well known prior art.

As detailed above, 3M discloses a headset communication system for a dual lane food service environment, wherein in one mode of operation a user is able to communicate with two lanes from a single headset. Ruppert discloses a communication system comprising a

headset and a base station, along with the means to transmit and receive information via both infrared and radio frequency signals. Takahashi discloses a radio telecommunications device with included infrared communications components for data transfer.

3M in view of Ruppert and Takahashi does not disclose:

- that the base unit, or programming unit, is wall mountable

However, the Examiner takes Official Notice that the concept of mounting the base unit of a portable communications device is substantially well known in the art. The base unit of a portable telephones is one particular component of a communication device that is specifically well-known in the art to be wall mountable.

To one of ordinary skill in the art at the time the invention was made, it would have been obvious to make the base unit of the invention of 3M in view of Ruppert and Takahashi to be wall mountable, as is well known art. The motivation behind such a modification would have been the space-saving advantages of a unit that mounts to a wall as opposed to one that sits on a shelf, countertop, or other horizontal surface. Telephone connections are also commonly built into the walls of houses and other shelter-type structures, and mounting the base of a communications device on the same or nearby wall would have minimized the amount of wire needed to properly connect the communication device as well as limited the physical exposure of the connection wire. This statement of well-known in the art has been made in previous office action(s). The statement is hereby taken to be admitted prior art because applicant has not

traversed the examiner's assertion of official notice, per MPEP 2144.03.

6. **Claims 33-34 and 36** are rejected under 35 U.S.C. 103 (a) as being unpatentable over 3M in view of Ruppert as applied above, and in further view of Lee et al (USPN 5247380). Hereafter, "Lee et al" will simply be referred to as "Lee".

As detailed above, 3M discloses a headset communication system for a dual lane food service environment, wherein in one mode of operation a user is able to communicate with two lanes from a single headset. Ruppert discloses a communication system comprising a headset and a base station, along with the means to transmit and receive information via both infrared and radio frequency signals. As discussed above, Ruppert discloses that the base station is able to alter the operation settings of the headset. Specifically, the headset of Ruppert can be awakened from a standby mode depending on selected transmission protocols (col. 10, lines 59-61).

While a valid communication link between these two devices is required for the control signal to be sent, 3M in view of Ruppert does not disclose:

the indicating of a ready condition for receiving programming signals through sending an infrared signal from the headset to the programming station

Lee discloses an infrared communications network for ensuring connection and error free transmission between the devices in the

network. As can be seen in Figure 1A, each transmission interface device in the network (24,26,30) includes a transmitter and receiver. Figures 4A-8 illustrate the process flow of the invention. Figure 4C illustrates the manner in which baton packets are transmitted to determine if components are responsive and are thus in service (col. 7, lines 7-27; col. 10, lines 24-48). The affirmative or responsive condition of a transmission interface device reads on "indicating a ready condition for receiving a programming signal of the headset by transmitting an infrared light signal from a headset IR detector emitter to a programming station IR detection emitter".

To one of ordinary skill in the art at the time the invention was made, it would have been obvious to include the handshake protocol for determining the connected devices in the system of Lee into the infrared communications protocols of the invention of 3M in view of Ruppert. The motivation behind such a modification would have been that such a communication procedure would have enabled the base station broadcasting to determine if the infrared link has a status of ready or down/out-of-service as well as adapt to frequent changes in this status, as is taught by Lee. The teachings of Lee also enables more than two devices to be connected and configured in the same system.

Regarding **Claim 34**, the condition of a node in the teachings of Lee as being responsive to a baton packet involves the nodes being 'on' in some manner. Ruppert discloses that the base station includes the ability to awake the headset from a standby condition in response

to a transmission (col. 10, lines 59-61). The positive application of battery power to a transceiver and corresponding signal processing circuitry in a node device such as a headset, corresponds to a such an "on" condition and is inherently required for the above responses to occur. Such a property reads on, "the step of indicating a ready condition further comprises turning the headset on". It is further noted that 3M teaches the step of turning a headset "ON" as preceding the result of completed headset programming (page 23).

Regarding **Claim 36**, please refer above to the rejection of the similar limitations of Claim 24 regarding the "emitter" and Claim 33 regarding the transmission of a "ready signal".

Response to Arguments

Applicant's arguments filed March 7, 2005 have been fully considered but they are not persuasive.

The applicant's remarks, page 7, line 7 through page 9, line 13 involve the teachings of Ruppert and the newly amended limitation of the "signal to the programming unit infrared light emitter containing the operation frequency for the transmitter and the receiver". On page 8, lines 24-25, the applicant has stated, "The other cited references do not supply this missing teaching of Ruppert". The examiner respectfully disagrees. In considering the disclosure of a reference, it is proper to take into account the inferences which one skilled in the art would reasonably be expected to draw therefrom. As applied in the above rejections, the reference of 3M (pages 22-23) suggests the sending of new channel information over the cable between

the base station and the headset. This suggestion is based on the fact that the new channel information is first "read" into to microprocessor of the base station, before an interconnection is made between the base station and headset by a programming cable. After the interconnection is made, the headset is programmed to the new channel, which suggests that information sufficient to enable this new channel setting in the headset is transmitted by the cable. The reference of Dress et al (USPN 6519448) has been provided herein as evidentiary support that such physical connections are known in the art as enabling frequency programming, as is also suggested by the applicant's admitted prior art (page 1, lines 22-26). Accordingly, replacing this cable with an infrared connection for data transfer, as taught by Ruppert, would have yet enabled such information to be transmitted between the base and headset. The cited teachings of Ruppert further support the notion implicit in 3M, that an electric signal can be used to tune the RF communication frequency. Accordingly, such a limitation is considered to be taught in view of the combined disclosures of 3M and Ruppert.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew Graham whose telephone number is 571-272-7517. The examiner can normally be reached on Monday-Friday, 8:30 AM to 5:00 PM (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin can be reached on 571-272-7848. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AG
Andrew Graham
Examiner
A.U. 2644

ag
June 26, 2005

VIVIAN CHIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600

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PROPERTY COUNSEL
3M INNOVATIVE PROPERTIES COMPANY

OCT 2 1 2005

REFERRED TO

Please find below and/or attached an Office communication concerning this application or proceeding.

Advisory Action Before the Filing of an Appeal Brief

Application No.	Applicant(s)	
09/740,624	HALL ET AL.	
Examiner	**Art Unit**	
Andrew Graham	2644	

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 03 October 2005 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

1. ☒ The reply was filed after a final rejection, but prior to or on the same day as filing a Notice of Appeal. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114. The reply must be filed within one of the following time periods:
   a) ☒ The period for reply expires 3 months from the mailing date of the final rejection.
   b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.

   Examiner Note: If box 1 is checked, check either box (a) or (b). ONLY CHECK BOX (b) WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

NOTICE OF APPEAL

2. ☐ The Notice of Appeal was filed on _____. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

AMENDMENTS

3. ☐ The proposed amendment(s) filed after a final rejection, but prior to the date of filing a brief, will not be entered because
   (a) ☐ They raise new issues that would require further consideration and/or search (see NOTE below);
   (b) ☐ They raise the issue of new matter (see NOTE below);
   (c) ☐ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
   (d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.

   NOTE: _____. (See 37 CFR 1.116 and 41.33(a)).
4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).
5. ☐ Applicant's reply has overcome the following rejection(s): _____.
6. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
7. ☐ For purposes of appeal, the proposed amendment(s): a) ☐ will not be entered, or b) ☐ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.

   The status of the claim(s) is (or will be) as follows:
   Claim(s) allowed: _____.
   Claim(s) objected to: _____.
   Claim(s) rejected: _____.
   Claim(s) withdrawn from consideration: _____.

AFFIDAVIT OR OTHER EVIDENCE

8. ☐ The affidavit or other evidence filed after a final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).
9. ☐ The affidavit or other evidence filed after the date of filing a Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing a good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).
10. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

REQUEST FOR RECONSIDERATION/OTHER

11. ☒ The request for reconsideration has been considered but does NOT place the application in condition for allowance because: please see continuation sheet(s).
12. ☐ Note the attached Information Disclosure Statement(s). (PTO/SB/08 or PTO-1449) Paper No(s). _____
13. ☐ Other: _____.

VIVIAN CHIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600

Andrew Graham
571-272-7517

Response to Arguments

Applicant's arguments received 10/3/05 have been fully considered but they are not persuasive.

On page 3, lines 20-22, the applicant has stated, "The ''Response to Arguments'' section of the Office Action asserts that it is obvious to make the invention because Ruppert teaches replacing a cable with an I/R connection (Office Action, page 19, lines 12-15)". The examiner respectfully submits, however, that this statement reflects a misinterpretation of the cited passage. The passage in question recites, "Accordingly, replacing this cable with an infrared connection for data transfer, as taught by Ruppert, would have yet enabled such information to be transmitted between the base and headset". The "as taught by Ruppert" clause only pertains to the "infrared connection for data transfer", as is evidenced by the rejection and citations of record. The concept of "replacing" is a particular form of "incorporation" noted in the proposed modification in the rejection of the pertinent claim limitations (page 7, lines 3-6). This statement establishes a reasonable expectation of success for the proposed combination in light of the fact that both methods of transmission (the IR of Ruppert and the cable of 3M) are able to transmit data.

On page 5, lines 11-13, the applicant has stated, "The asserted motivation may provide reasons for adding general I/R communication capabilities to a headset, but do not provide a suggestion or motivation to program the headset operational frequency using I/R

transmission". The examiner respectfully disagrees. First, it should be noted that it is not the manner of transmission (cabled/IR or wired/wireless) that ultimately "programs" a headset, but rather, the underlying data transmitted in either of such formats. The transmission of such *data*, wherein this data is utilized for programming the headset, is implicit in the teachings of 3M, though the *manner* of transmission is through a wire or cable. Ruppert discloses that *data* may be transmitted in an infrared *manner*. The applicant has acknowledged that the asserted motivation may provide reasons for adding IR communication capabilities to a headset. To argue that such an added manner of IR communication would not be obvious for use with the data or digital signals otherwise communicated in the system of 3M, including that which results in the programming of the headset, fails to acknowledge or give proper weight to the teachings of 3M. The pertinent limitation, so far as it is represented in the pending claim language, is at least considered suggested by and thus obvious in view of the *data* transmitted in the system of 3M and the *manner* of data transmission in the system of Ruppert.

On page 5, lines 18-19, the applicant has stated, "In fact, certain well-known characteristics of infrared technology would likely have deterred ones of ordinary skill in the art from trying to incorporate the technology in the systems". The examiner respectfully submits, however, that arguments of counsel cannot take the place of evidence in the record and that any objective evidence, such as the

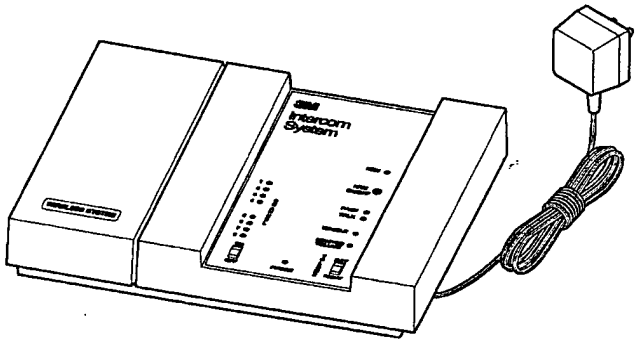
statements made in lines 18-23 of page 5, must be factually supported by an appropriate affidavit or declaration to be of probative value, MPEP 716.01. At present, no such affidavit or declaration has been submitted.

3M

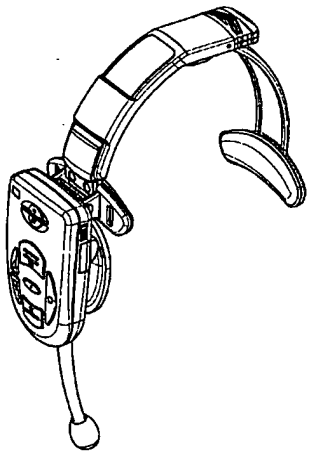
Headset Intercom System

Model C960

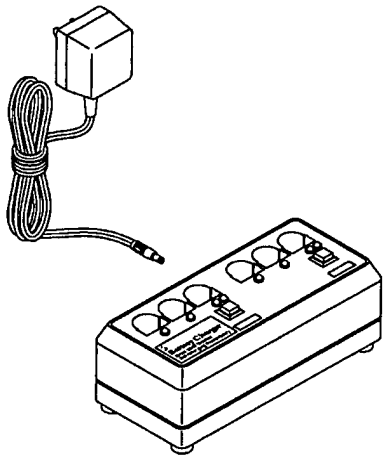
Operating Instructions



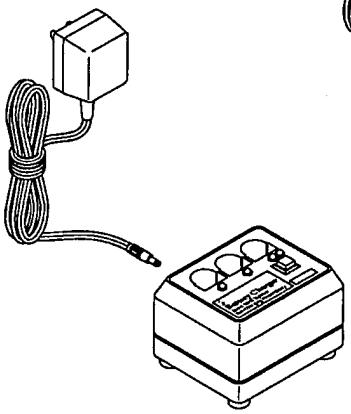
Base Station



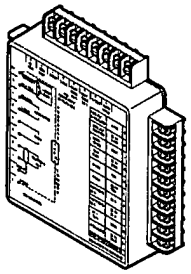
Headset



6-Slot Battery Charger



3-Slot Battery Charger



Interconnect Module

SP-385A

Intended Use

The 3M Headset Intercom System, Model C960, is designed to provide 2–way radio–frequency audio communication in quick service drive–through restaurants and convenience stores.

Misuse of the Model C960 could result in poor performance and/or undesired operation.

FCC Information

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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Introduction

The 3M Model C960 Headset Intercom System is a wireless intercom system designed for high reliability, compactness, and ease of service.

The system can be programmed to operate on any one of 16 different channels to provide high–quality audio performance and reduce the possibility of interference between neighboring wireless systems.

Systems Configuration

The system can be configured in one of five ways depending on the number of menu signs (lanes) at the facility and the type of communication desired.

Single-Lane Standard Communication System

The *single–lane standard communication system* provides standard communication (talk *or* listen) for facilities that have one menu sign.

The system consists of one base station and one or more headsets and battery chargers.

Single-Lane Duplex Communication System

The *single–lane duplex communication system* provides duplex communication (simultaneous talk and listen) for facilities that have one menu sign.

The system consists of one base station and one or more headsets and battery chargers.

Dual-Lane Standard Communication System

The *dual–lane standard communication system* provides standard communication (talk *or* listen) for facilities that have two menu signs.

The system consists of two independent systems - one dedicated to menu sign 1 and the other dedicated to menu sign 2. The headsets are programmed to work with one system or the other and are labeled accordingly (1 or 2).

Dual-Lane Duplex Communication System

The *dual–lane duplex communication system* provides duplex communication (simultaneous talk *and* listen) for facilities that have two menu signs.

The system consists of two independent systems - one dedicated to menu sign 1 and the other dedicated to menu sign 2. The headsets are programmed to work with one system or the other and are labeled accordingly (1 or 2).

Cross-Lane Communication System

The *cross–lane communication system* provides duplex communication (simultaneous talk *and* listen) for facilities that have two menu signs.

The system consists of two duplex systems that are connected to a cross–lane module. The headsets are programmed for either lane 1 or lane 2.

During *off–peak* hours, the cross–lane module can be turned ON to link the two systems and enable one operator to simultaneously talk *and* listen to customers at menu sign 1 or menu sign 2 or with other headset operators.

During *peak* hours, the cross–lane module can be turned OFF to separate the systems and enable menu sign 1 operators to talk to customers at menu sign 1, and menu sign 2 operators to talk to customers at menu sign 2.

Systems Components

The number of system components and the procedures necessary to operate them vary depending on the system configuration. However, three components are common to all system configurations.

Base Station

The base station is the interface between the customer at the menu sign and the headset worn by the operator. See Figure 1.

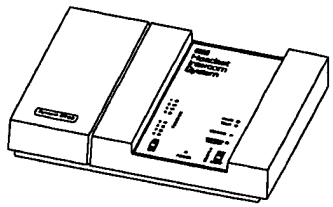


Figure 1. Base Station

Headset

The headset is a wireless, battery–powered, two–way radio used by the operator to communicate with menu sign customers and with other store personnel who are wearing headsets.

Headsets feature a light–weight design to provide for comfort. The headset pads can be easily removed and reinstalled, so operators can have their own set of pads for improved hygienic conditions. See Figure 2.

Figure 2. Headset

Battery Charger

The battery charger charges headset batteries in approximately 1.5 to 2 hours. The charger is available in 3–slot and 6–slot versions. See Figure 3.

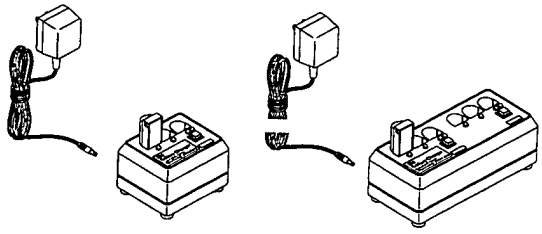


Figure 3. 3–Slot and 6–Slot Battery Chargers

Base Station

The base station controls and indicators are shown below.

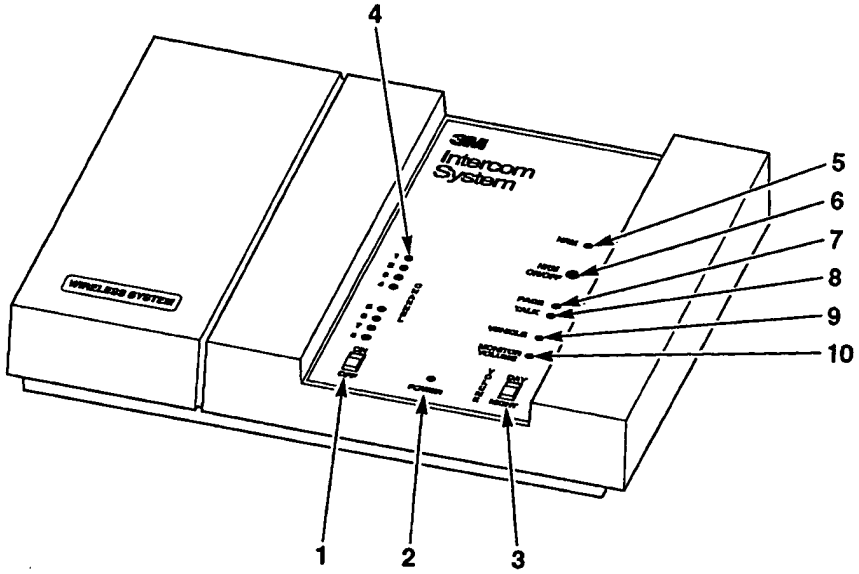


Figure 4. Base Station Controls and Indicators

1 ON/OFF Switch — The ON/OFF switch controls power to the base station.

2 POWER Indicator — This indicator lights when the ON/OFF switch is in the ON position.

✓ Note

If for some reason the C960 headset system does not operate and the system includes an optional wired backup system, turn off the C960 Base Station to enable the backup system.

3 VOLUME DAY/NIGHT Switch — With the switch in the DAY position, the volume of the menu sign speaker is increased for daytime operation. With the switch in the NIGHT position, the volume of the menu sign speaker is decreased for nighttime operation. (Sound travels further and more efficiently at night.)

4 Channel Indicators — These indicators light to show which of the 8 channels is selected.

5 NRM Indicator — This indicator blinks when the Noise Reduction Module is switched on.

6 NRM On/Off Button — This button turns the optional Noise Reduction Module on or off.

7 Page Indicator — This indicator lights when headset Page communications occur.

8 Talk Indicator — This indicator lights when headset–to–menu sign "Talk" communications occur.

9 Vehicle Indicator — This indicator lights when a vehicle is detected at the menu sign.

10 Monitor Volume Access — This access hole allows for adjusting the volume of the optional monitor speaker.

Headset

The headset controls are shown below.

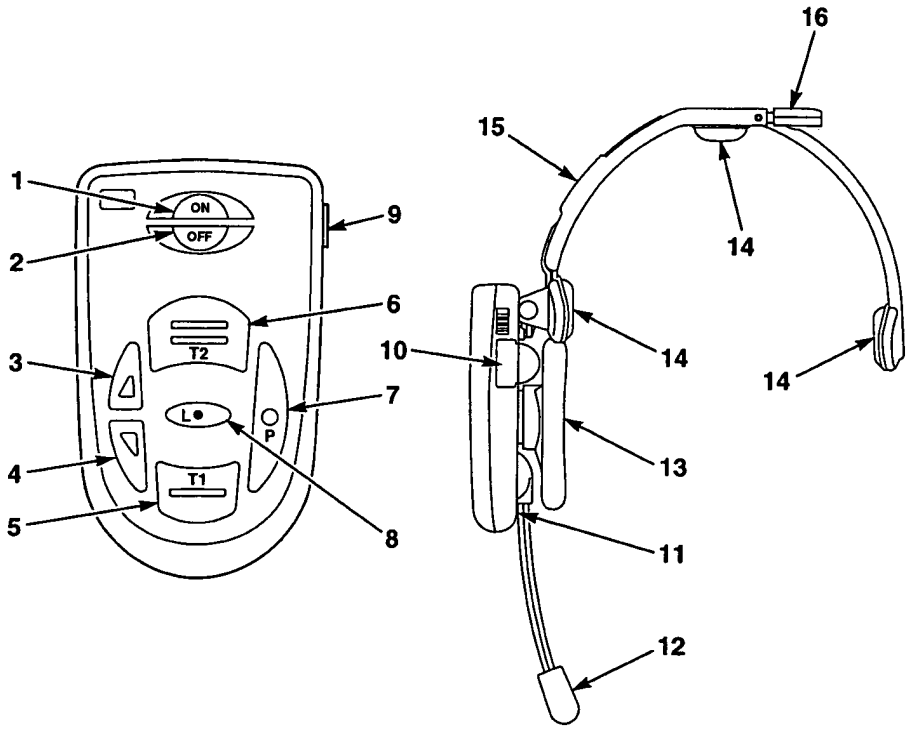


Figure 5. Headset Controls

1 ON Switch

Press the ON switch to turn on the headset.

2 OFF Switch

Press the OFF switch to turn off the headset.

3 Volume UP ▲ Control

Press the volume up▲ control to increase the volume in the headset earpiece.

4 Volume DOWN ▼ Control

Press the volume down▼ control to decrease the volume.

When either volume control is pressed, the headset emits a short tone to indicate the new volume level. There are 15 different volume levels from minimum to maximum.

If the headset volume is at its maximum level, a low, continuous tone sounds when the volume up▲ control is pressed. A low, continuous tone also occurs when the volume reaches minimum level and the volume down▼ control is pressed.

When the headset is turned on, headset volume automatically returns to the previously–set level. Note that even when set to its lowest level, headset volume is not turned completely off.

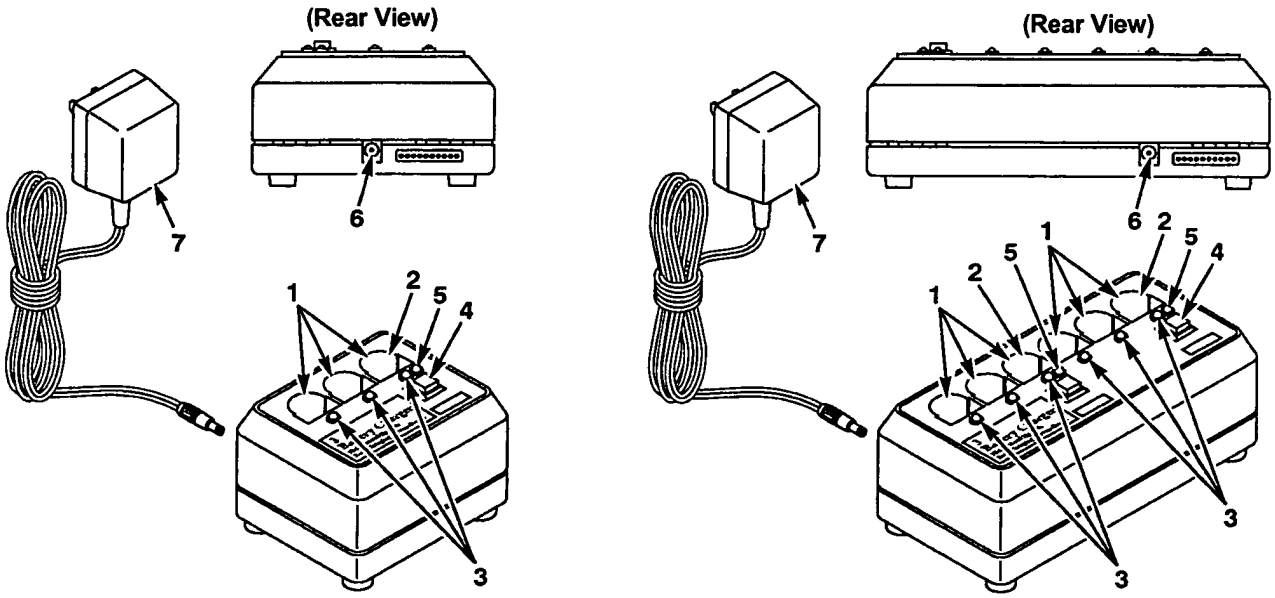
5 T1 (Talk Lane 1) Switch

Press and hold the **T1 (Talk Lane 1)** switch to talk to the customer at the menu sign in lane 1. Release the switch to listen.

6 T2 (Talk Lane 2) Switch	For dual–lane systems, press and hold the **T2 (Talk Lane 2)** switch to talk to the customer at the menu sign in lane 2. Release the switch to listen. For single–lane systems, T2 can also be used to talk to lane 1.
7 Page Switch	Press and hold the **Page** switch to talk to internal personnel without being heard by the customer at the menu sign. Release the switch to listen. (With the switch released, you can hear both menu sign customers and internal paging.)
8 Talk Lock Switch (Hands Free)	For duplex systems, press the talk lock switch once to talk and listen to the customer. This enables hands–free operation.
9 Battery Release	Push the battery release up and hold it there while sliding the battery out of the headset housing.
10 Battery	This rechargeable battery provides power to the headset.
11 Headset Programming Jack	This jack accepts the programming cable from the base station to allow the headset to be programmed to the same channel as the base station.
12 Microphone/Filter	The microphone sends the headset operator's voice to the menu sign or other headset operators. The filter is a protective cover for the microphone.
13 Earphone/Earpad	The *earphone* is a speaker that broadcasts the voice from the customer at the menu sign or from other headset operators. The replaceable *earpad* covers the earphone and cushions the operator's ear to provide comfort.
14 Headband Pads	The headband pads cushion the operator's head to provide comfort.
15 Headband Adjustment Slide	The headband adjustment slide is used to increase or decrease the size of the headband.
16 Headband Width Adjustment Tab	The headband width adjustment tab is used to increase or decrease the headband pad pressure.

Battery Chargers

The 3–slot and 6–slot battery charger controls are shown below.



1	**Charging Slots**	The charging slots hold batteries during the recharging cycle.
2	**Conditioning and/or Charging Slot**	This dual–function slot holds a battery during conditioning and recharging cycles. This slot functions as a conditioning slot when the conditioning button is pressed.
3	**Charging Status Indicators**	The charging status indicators light RED, GREEN, or ORANGE to indicate charging status: RED indicates the battery is being charged. GREEN to indicate the battery is fully charged. ORANGE to indicate the battery is defective.
4	**Conditioning Button**	Press the conditioning button to condition a battery that is inserted in the conditioning/charging slot.
5	**Conditioning Status Indicator**	The conditioning status indicator lights YELLOW to indicate the battery in the conditioning slot is being conditioned.
6	**Power Supply Jack**	This jack accepts the plug from the power supply cord.
7	**Power Supply**	The power supply provides power to the battery charger.

Introduction

To prepare the headset for use, you will need to check the headset for proper fit and install the cap clip (if desired).

Checking the Headset for Proper Fit

To ensure effective operation and comfort:

- Adjust the headband width.
- Adjust the headband size.
- Position the ear pad and microphone.

Adjusting Headband Width

Adjust the headband width until the headband pads hold the headset firmly in place without causing discomfort. The headset can be worn with the ear pad against either ear. The three width settings are shown in Figure 6.

*If the headset is too **tight**:*

1. Fold the headband in toward the ear pad.
2. Push the width adjustment tab away from the center headband pad.
3. Fold the headband out against the adjustment tab.

*If the headset is too **loose**:*

1. Fold the headband in toward the ear pad.
2. Push the width adjustment tab toward the center headband pad.
3. Fold the headband out against the adjustment tab.

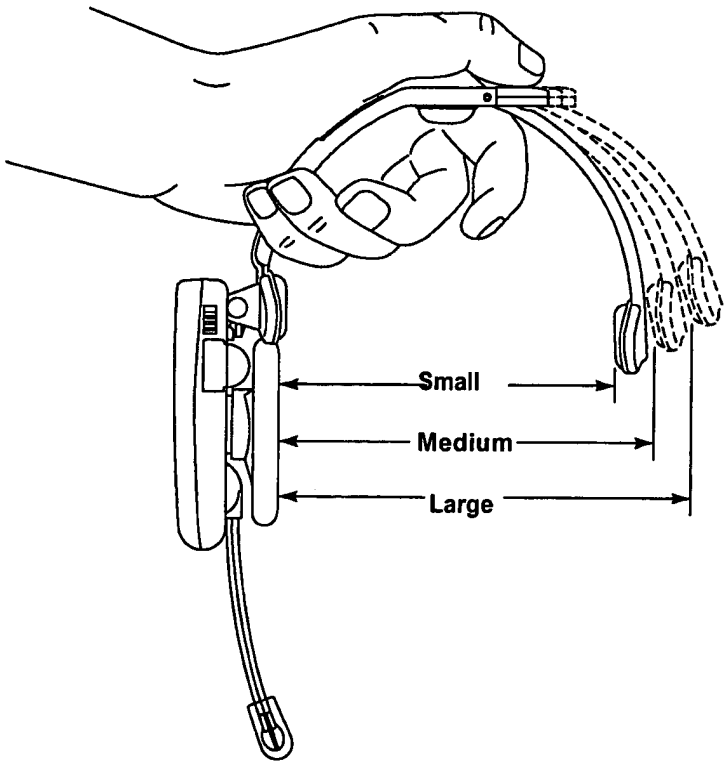


Figure 6. Headband Width

Adjusting Headband Size

Adjust the size of the 2–piece headband until the ear pad rests against one ear and the headband pads rest just above each ear.

- Slide the headband *apart* to make it *larger.*
- Push the headband *together* to make it *smaller.*

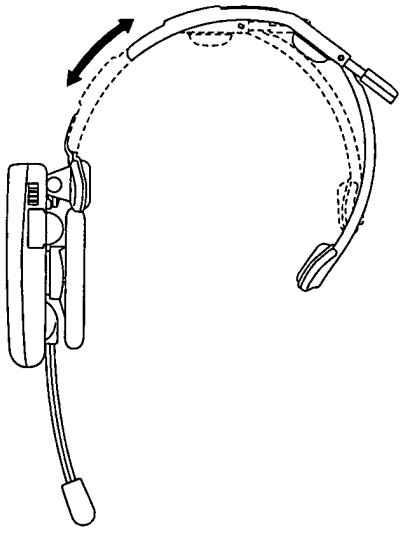


Figure 7. Headband Size

Positioning the Ear Pad and Microphone

Rotate the microphone boom up or down so that its tip is in line with the corner of your mouth. Do not bend the rubber microphone boom. See Figure 8.

Figure 8.

Installing the Cap Clip

To install the cap clip:

1. Remove the side headband pad (from above the ear pad). Insert a dime in the slot on the headband pad housing and twist the dime to release the tab. See Figure 9.

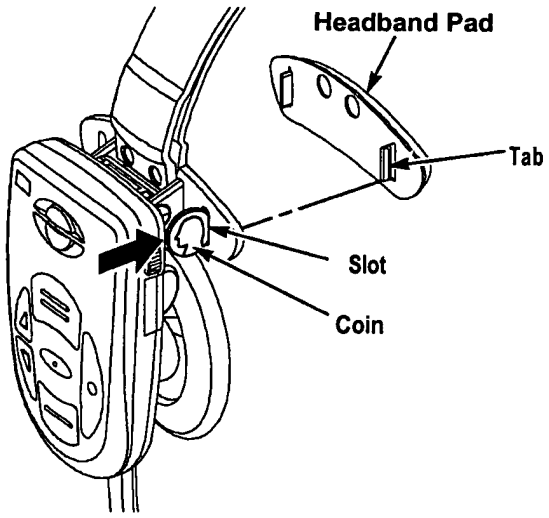


Figure 9.

2. Extend the headband to maximum size.
3. Using a ball point pen, release the headband latch and slide the 2–piece headband apart. See Figure 10.

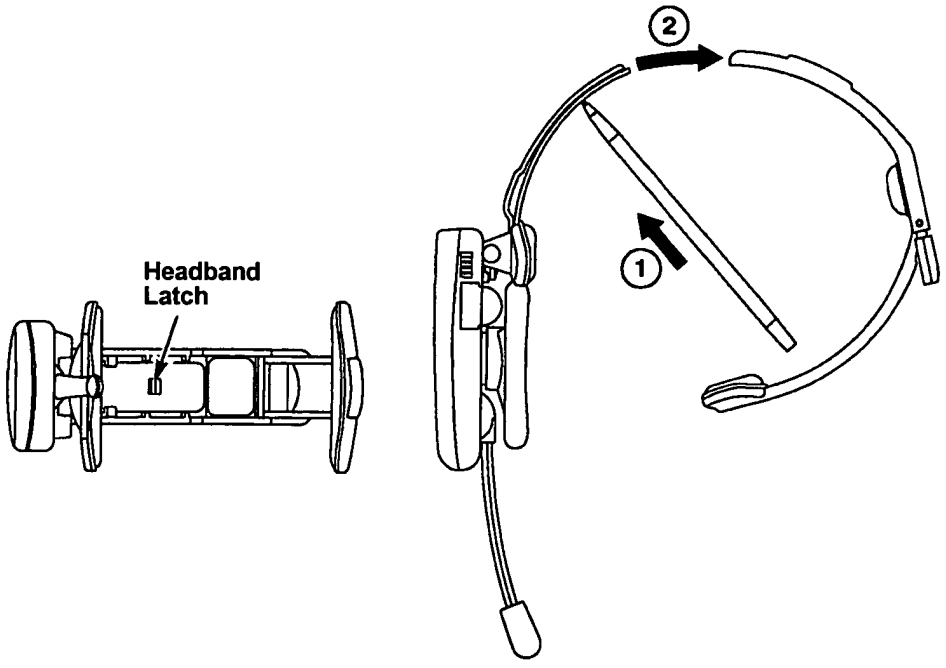


Figure 10.

4. Slide the cap clip onto the cap band just above the ear.

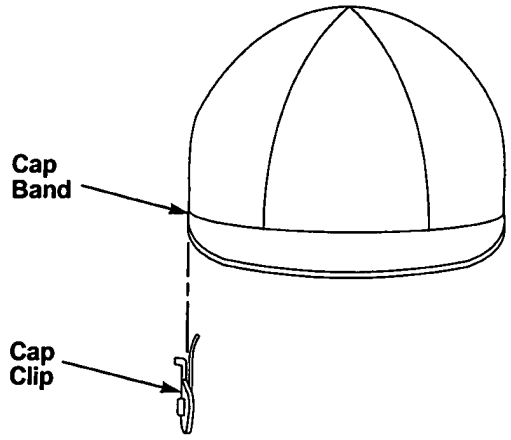


Figure 11.

5. Slide the cap clip over the inside half of the adjustable headband until it snaps into position over the headband pad mount. See Figure 12.

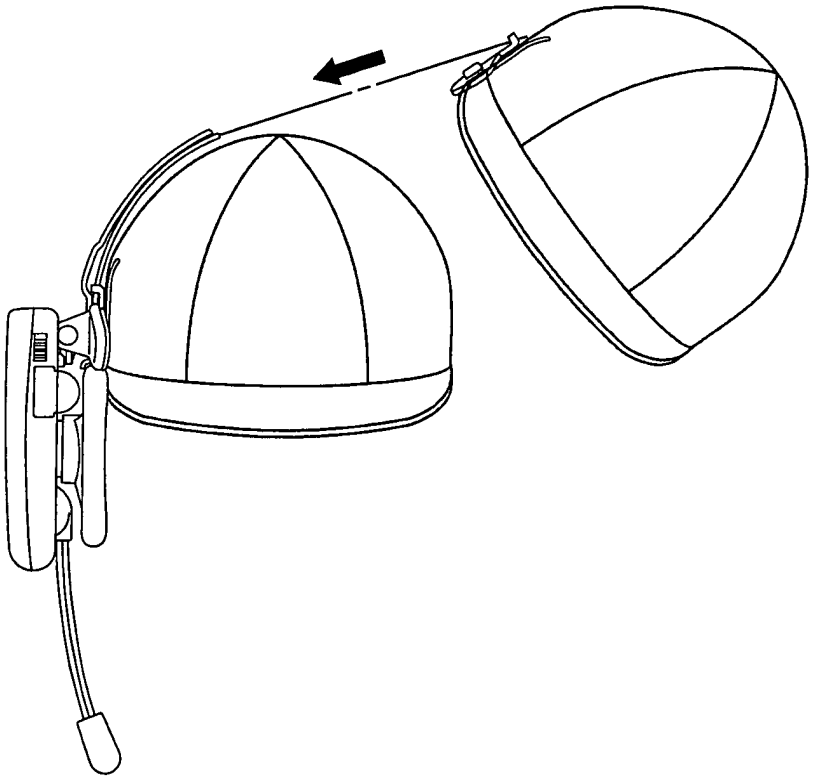


Figure 12.

System Startup

System startup includes turning on the base station and each headset that will be used.

Turning On the Base Station

To turn on the base station:

1. Slide the power ON/OFF switch to the ON position. Check to see that the POWER indicator lights.
2. Slide the VOLUME switch to the desired position (DAY or NIGHT).

Turning On the Headset

To turn on the headset, press the ON switch located on the transceiver housing. A single tone will sound in the earphone to indicate the headset has been turned on.

Operating Modes

The system has several operating modes. The number of available operating modes depends on the system configuration (*single–lane vs dual–lane, standard communication vs duplex communication, etc.*).

Standby Mode

In the standby mode, the headset is on and waiting to receive communication from the menu sign or other headset operators. This mode is available with all system configurations.

Talk/Listen Mode

Use the talk/listen mode to talk to the customer at the menu sign. This mode is available with all system configurations.

Single–Lane Standard *or* Duplex Communication Systems

1. A *single beep* alert tone sounds in the headset at 2–second intervals when the system detects a customer (vehicle) at the menu sign.
2. When you hear the alert tone, press and hold T1 *or* T2 to talk to the customer at the menu sign. Release T1 *or* T2 to listen.

Dual–Lane Standard *or* Duplex Communication Systems

In dual–lane systems, some headsets are programmed to communicate with Lane 1 and others are programmed to communicate with Lane 2. The headsets are labeled accordingly.

1. An alert tone sounds in the headset when the system detects a customer (vehicle) at the menu sign:
   - The alert tone for Lane 1 is a single beep that repeats at 2–second intervals.
   - The alert tone for Lane 2 is a double beep that repeats at 2–second intervals.
2. When you hear the *single beep* alert tone, press and hold T1 and talk to the customer at menu sign 1. Release T1 to listen.

   When you hear the *double beep* alert tone, press and hold T2 to talk to the customer at the menu sign 2. Release T2 to listen.

Cross–Lane Communication Systems

Communication During Peak Hours

During peak hours, the cross–lane module is turned *off* and the system functions like a dual–lane duplex system. Some headsets are programmed to communicate with Lane 1 and others are programmed to communicate with Lane 2. The headsets are labeled accordingly.

Communication During Off–Peak Hours

During off–peak hours, the cross–lane module is turned *on* to enable a single operator to communicate with customers in either lane (1 *or* 2).

1. An alert tone sounds in the headset when the system detects a customer (vehicle) at the menu sign:
   - The alert tone for Lane 1 is a single beep that repeats at 2–second intervals.
   - The alert tone for Lane 2 is a double beep that repeats at 2–second intervals.
2. When you hear the *single beep* alert tone, press and hold T1 and talk to the customer at menu sign 1. Release T1 to listen.

   When you hear the *double beep* alert tone, press and hold T2 to talk to the customer at the menu sign 2. Release T2 to listen.

Talk Lock Mode ("Hands Free")

Use this mode to operate "hands free." The talk lock mode is only available with duplex system configurations.

In this mode, the headset automatically switches from standby to talk/listen when a customer is detected at the menu sign. The headset automatically switches back to standby when the customer leaves the menu sign.

✓ Notes

"Hands free" operation (talk lock mode) prevents all other headset operators from communicating.

"Hands Free" operation will not work in cross lane mode.

To use the talk lock mode, press the talk lock switch on the transceiver housing. To return to normal headset operation, press T1 or P.

Page Mode

Use this mode to talk to other operators who are wearing headsets without being heard by the customer at the menu sign. This mode is available with all system configurations.

To page another operator, press and hold the page switch. Release the page switch to listen.

✓ Note

If you are **not** a menu sign operator, do not use the page mode while the menu sign operator is communicating. Doing so may interrupt or prevent communication between the menu sign operator and the customer.

Page Monitor Mode

Use this mode to listen for pages from other operators (without hearing the communication to and from the menu sign). This feature is convenient for managers and supervisors who only want to hear page communication. This mode is available with all system configurations.

To use the page monitor mode:

1. Turn the headset OFF. See Figure 13.

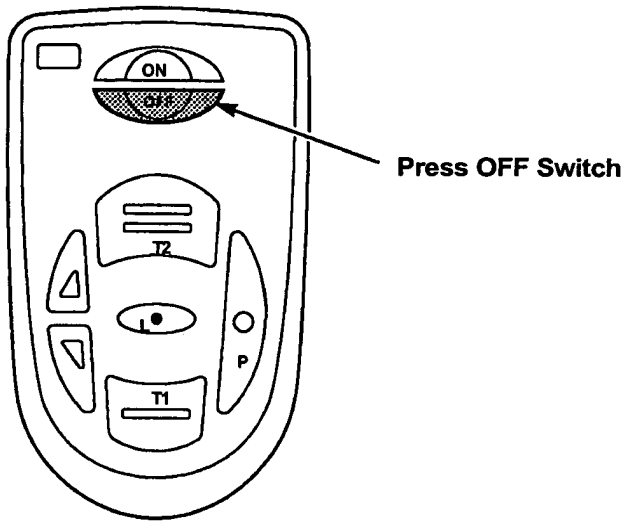


Figure 13. OFF Switch

2. While pressing and holding the page switch, turn the headset ON. This locks the headset in the page monitor mode. See Figure 14.

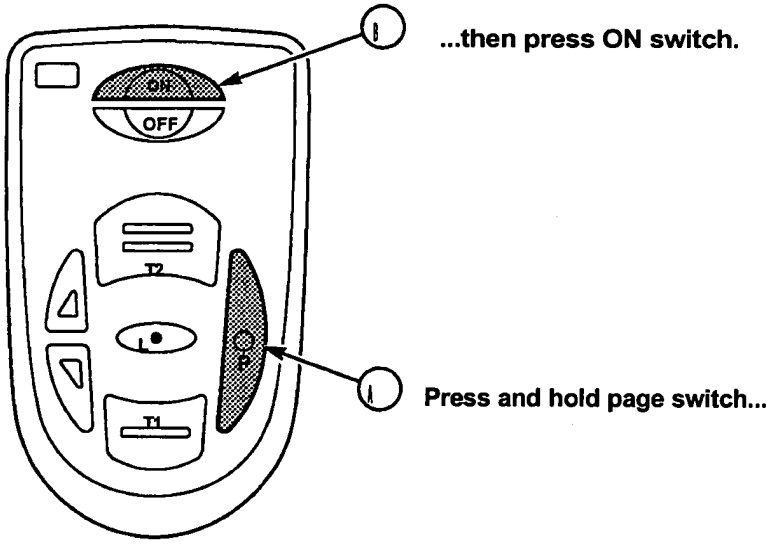


Figure 14. Page Switch and OFF Switch

To respond to a page, press P (page switch).

To return to normal headset operation:

1. Turn the headset OFF.
2. Turn the headset ON.

Special Considerations

When using the talk/listen mode or the page mode, keep the following things in mind:

- Communication between the menu sign operator and the customer may be heard by several people.
- Only one headset operator can talk at a time.
- In the talk/listen mode, communication **from the headset** is heard by menu sign customers and other operators who are wearing headsets.
- In the talk/listen **and** page modes, communication **from the menu sign** is heard by other operators who are wearing headsets.

Headset

Replacing the Battery

When the battery voltage is too low, the headset sounds a short, low–volume tone at seven–second intervals to alert the operator to install a fully charged battery. The "battery voltage low tone" continues for two minutes after which the headset turns off automatically to prevent damage to the batteries.

✓ Note

When installing a battery, make sure it is fully charged. It is important to remember that an *unused* C960 battery loses five percent of its charge per week. If a batteries has not been used for several weeks, make sure to charge prior to use.

To replace the battery:

1. Push and hold the battery release. See Figure 15.
2. Push the discharged battery out of the transceiver housing.
3. Insert a ***fully charged battery*** in the housing with the notch facing the battery release. Make sure the battery is fully inserted (battery release clicks). See Figure 15.

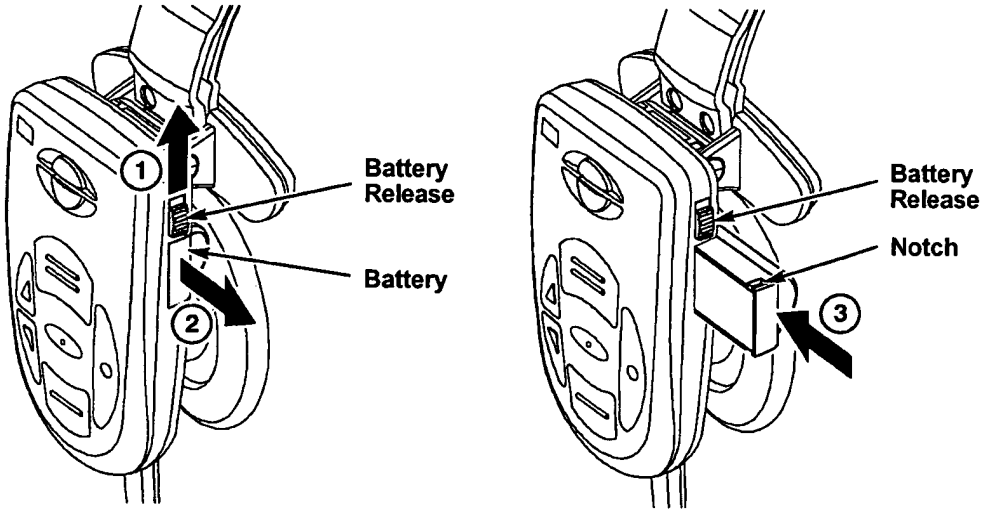


Figure 15.

Replacing the Side Headband Pads

To replace the side headband pads:

1. Insert the edge of a dime into the slot on the headband pad housing. See Figure 16.
2. Twist the dime to release the tab.

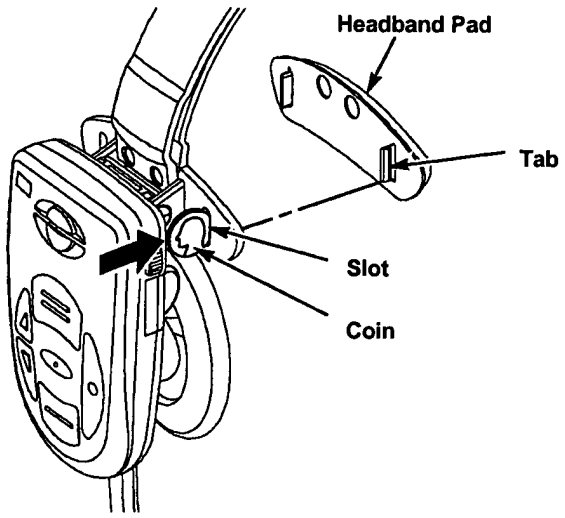


Figure 16.

Replacing the Center Headband Pad

To replace the center headband pad:

1. Insert the edge of a dime between the main headband and the top headband pad and pry up to remove the pad. See Figure 17.
2. Snap the new pad into place.

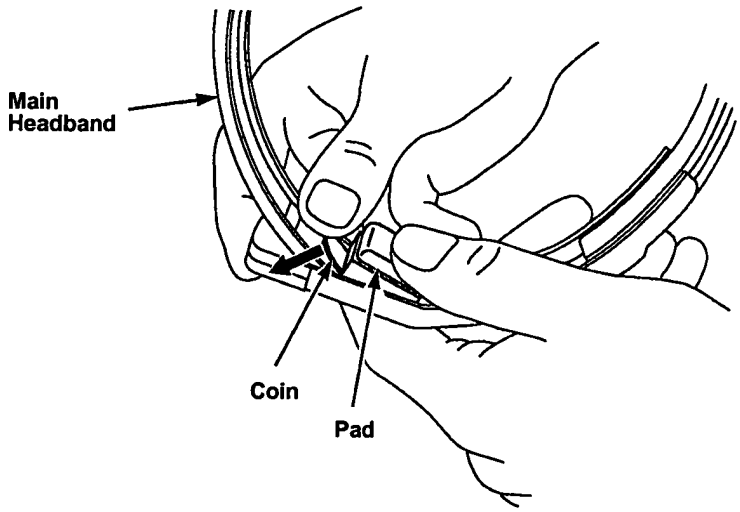


Figure 17.

Replacing the Ear Pad

To replace the ear pad, remove the worn/damaged ear pad from the ear cup and replace it with a new pad.

Battery Charger

Location

The battery charger should be placed on a flat surface such as a desktop or table in a clean, dry environment.

Cleaning the Contacts

If the indicators fail to light during charger operation, clean the contacts using an alcohol–moistened cotton swab.

Batteries

Care, Handling and Storage

Avoid dropping batteries.

Do not carry batteries in your pockets or leave them in hot, damp or dirty places.

Clean the battery contacts periodically using an alcohol–moistened swab.

Be careful not to short the battery contacts together.

Do not set the batteries contact–side down on a bare metal countertop-especially if it is damp.

Battery Voltage Low Tone

When the battery voltage becomes too low, a short, low–volume tone sounds in the headset at seven–second intervals to alert the operator to replace with a fully charged battery.

The "battery voltage low tone" continues for two minutes after which the headset turns off automatically to prevent damage to the batteries.

Charging Batteries

To charge a battery, insert the battery in one of the charging slots as shown in Figure 18.

- The indicator lights RED to indicate the battery is charging.
- The indicator lights GREEN to indicate the battery is fully charged.
- The indicator lights ORANGE to indicate the battery is defective.

✓ Note

Discharged batteries require 1–1/2 to 2 hours to charge.

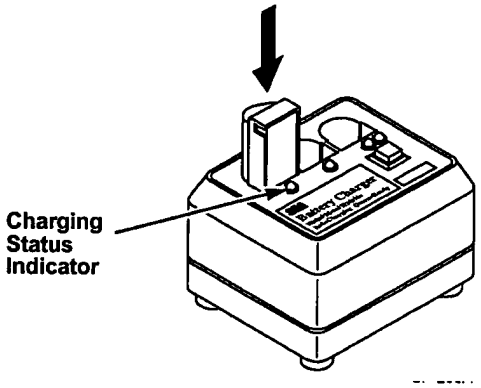


Figure 18.

To condition a battery:

1. Insert the battery in the charging/conditioning slot as shown in Figure 19.
2. Press the conditioning button within 2 seconds after inserting the battery. The indicator lights YELLOW to indicate the battery is being conditioned.

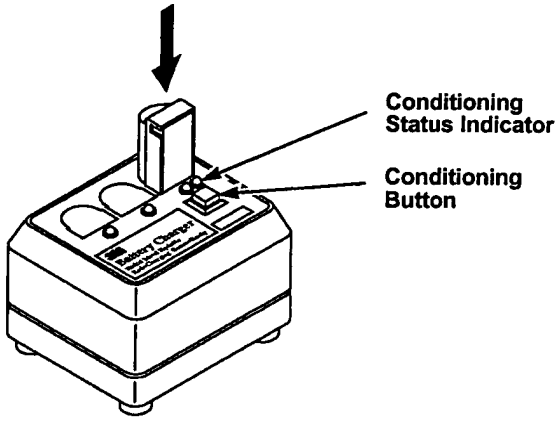


Figure 19.

Disposing of Batteries

To help protect the environment, C960 rechargeable batteries which have reached the end of their useful life should be disposed of in accordance with local requirements.

Making Sure Batteries are Ready for Use

Follow these tips to make sure batteries are always ready for use:

- Have an extra battery for each headset. This helps ensure that a fully charged battery is always available.
- Recharge a low battery as soon as it is removed from the headset. When a battery is low, repeat tones are heard in the headset.
- Keep the battery contacts clean: both those on the battery and those in the headset battery holder. To clean the contacts, use an alcohol–moistened cotton swab.
- Remember that a battery recharge takes approximately 1–1/2 to 2 hours.
- Avoid removing and reinserting batteries while they are charging (charging status indicator is RED).
- Remember that batteries discharge fastest during Talk and Page operation. Avoid unnecessary communications.

Important Information about C960 Rechargeable Batteries

Keep the following information in mind as you operate the system and as you establish operating procedures:

- Each 3M battery contains an internal protective device to prevent unsafe discharge rates. But, as with any battery, avoid shorting across the battery contacts with metal items. Never carry a battery in a pocket or place it in a drawer where it can accidentally be shorted by keys, coins etc.
- Have adequate charging capacity for the number of headsets in your system. One 3–slot battery charger will handle up to three headsets. Use of more than three headsets requires a 6–slot battery charger.

- Batteries perform best at moderate temperatures. Extremes of heat and cold reduce their performance.
- An unused C960 battery loses five percent of its charge per week. Batteries that have not been used for several weeks should be recharged before use.

Programming the Headset for Cross-Lane Operation

The headsets are factory programmed for single–lane operation to enable the operator to press either T1 or T2 to communicate with lane 1.

For cross–lane systems, the headsets must also be programmed to enable communication with either lane 1 *or* lane 2. With the cross–lane module turned ON, the lane 1 **or** lane 2 operators can press T1 to talk to to lane 1 customers **or** T2 to talk to lane 2 customers.

To program the headset for cross–lane operation:

- While pressing and holding *both* the T1 and T2 switches on the headset, turn the headset ON. Hold all three switches for at least 5 seconds. See Figure 20.
- Audible tones will be heard in the headset earpiece, indicating that the headset is programmed for cross–lane operation.

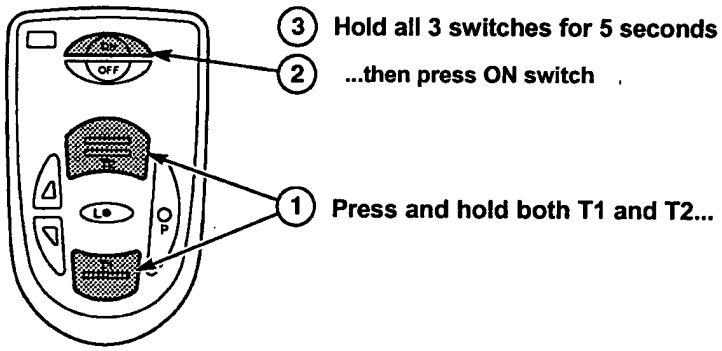


Figure 20.

Reprogramming

To remove this function and lock T1 and T2 back together, first turn the headset OFF, then hold down either T1 or T2 while pressing ON for 5 seconds. You will hear an acknowledging beep. (Holding down T1 configures the headset to be a lane 1 headset; holding down T2 configures it for lane 2.

Enabling/Disabling the Talk Lock Feature

The talk lock feature provides hands free operation in duplex communication systems. With the talk lock feature enabled, the headset automatically switches from standby to talk/listen when a customer is detected at the menu sign. The headset automatically switches back to standby when the customer leaves the menu sign.

To enable or disable the talk lock feature:

1. Turn the headset OFF.
2. Press and hold the L button while pressing and holding the ON button until audible tones are heard. This indicates that the feature has been enabled or disabled.
3. Check headset operation to determine if the talk lock feature has been *disabled* or *enabled.* With the talk lock feature ***enabled***:
   - The headset automatically switches from standby to talk/listen when a customer is detected at the menu sign.
   - The headset automatically switches back to standby when the customer leaves the menu sign.

✓ Note

The headsets are shipped with the talk lock feature enabled.

Changing Channels if Interference is Encountered

Symptoms of Interference:

- The operating range between the base station and the headsets gets very short, sometimes 25 feet or less.
- Normally, you will hear nothing to indicate interference. Occasionally, you might hear a whistle or a chirp in the background, but seldom, if ever, will you hear talking.
- The Talk or Page LED flickers briefly causing one of the following:
  a. The system may leave the STANDBY mode, and go into the LISTEN mode with no vehicle alert heard.
  b. The system may drop out of TALK LOCK by itself.

Solutions:

- Change the base station to another channel, at least three channels away. A better solution is to change jumper J3 to Lane 2 if possible.
- Locate and shut off other 900 MHz devices in the building, such as cordless phones, video systems, and speaker systems.
- In cases where a cellular phone tower is nearby, certain combinations of cell frequencies may cause interference. In some cases, changing channels may have no effect. Please call you local 3M Dealer, or 3M F.S.T. Communications Products Technical Service (800–328-0033) in these cases.

The C960 system is capable of operating on any one of eight different channels. You can correct these types of interference by changing the base station operating channel. To do this:

1. Pull outward on the right side of the base station half–cover and then lift and remove the cover. See Figure 21.

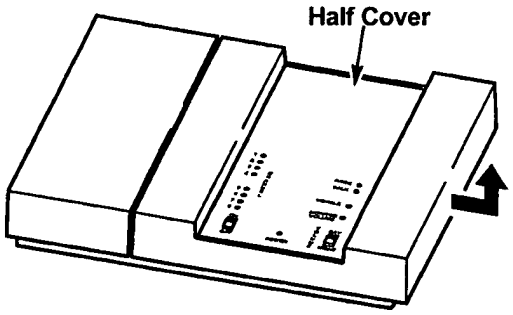


Figure 21.

2. With the base station turned on, press and release the Channel Select switch once. (This advances the system to the next channel.) One of the red indicators (1–8) will light, indicating the newly selected channel.

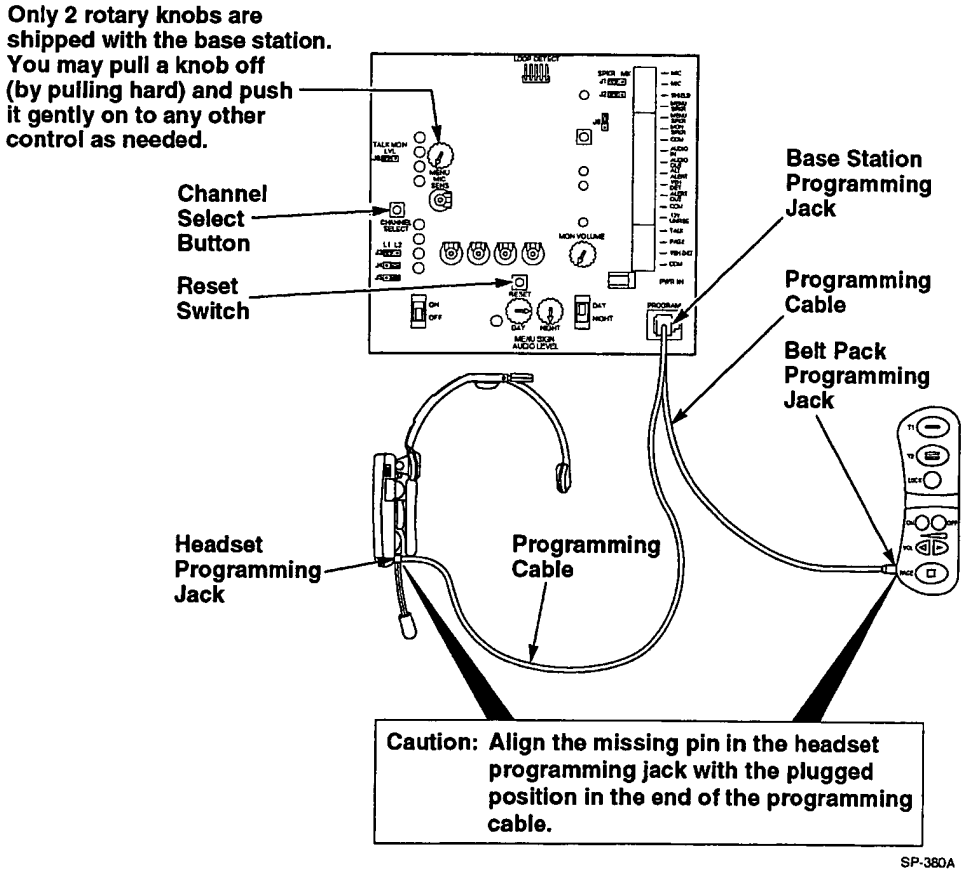


Figure 22.

3. Press the RESET switch to "read" the new channel selection into the microprocessor.

✓ Note

When two systems are used in a cross–lane application, both base stations **must** be set to the same channel.

4. With the headset turned OFF, plug one end of the programming cable into the headset programming jack. See Figure 22.
5. Plug the other end of the programming cable into the base station programming jack. See Figure 22.
6. Turn the headset ON. Audible tones will be heard in the headset earpiece, indicating that programming is complete.
7. Repeat Steps 1 through 6 to program the rest of the headsets.

The headset is now programmed to the same channel as the base station. If interference continues to occur, repeat the channel programming procedure. After seven channel changes, the original channel will again be encountered. If none of the 8 channels are interference–free, try 8 additional channels on lane 2 by following the steps below: **Note: These steps may be used for single–lane systems only.**

1. On the base station, move jumper J3 to LANE 2.
2. Press the RESET button, or turn the base station OFF, then back ON.
3. Program all headsets with the programming cable by repeating the steps listed previously in **"Changing Channels if Interference is Encountered."**

Changing the Day/Night Switch Setting

Outdoors, sound travels best at night when air temperatures are cooler and background noise is reduced. To allow you to reduce the volume of the menu sign speaker to a lower, pre–set nighttime level, the base station has a VOLUME DAY/NIGHT switch. See Figure 23.

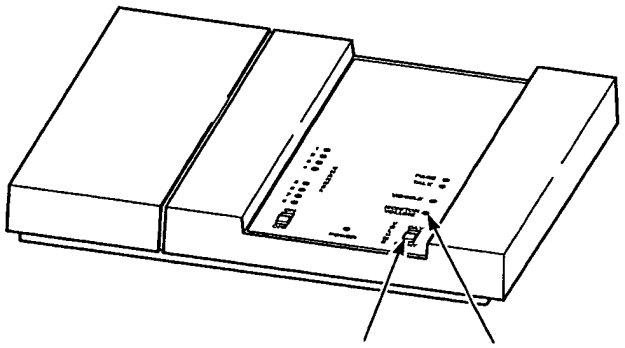


Figure 23.

Normally, the VOLUME DAY/NIGHT switch is always left in the DAY position.

However, if local ordinances require quieter nighttime operation of the menu sign, move the VOLUME DAY/NIGHT switch to the NIGHT position.

Adjusting the Monitor Speaker Volume

If the system has an optional monitor speaker, adjust its volume using the following procedure:

1. With the base station turned ON, insert a small straight–blade screwdriver into the MONITOR VOLUME access hole. See Figure 23.
2. Turn the volume control clockwise to increase the volume or counterclockwise to decrease it.

Introduction

To use the following troubleshooting guide, locate the problem in the left column and look for the problem's possible causes and corrections in the middle and right columns. Possible causes are listed in the order in which they are most likely to happen. Check for possible causes in the given sequence to help isolate the problem.

System Troubleshooting

Problem	Possible Cause	Solution
1. No communications. All headsets hear static.	1. The base station is not ON.	1. Turn the base station ON. Make sure the power transformer is plugged into the wall outlet and into the base station power receptacle. If the red power light does not come on, check for power at the wall outlet.
	2. Base station and headsets are not programmed to same channel.	2. Reprogram the headsets with the programming cable.
	3. The Base Station is defective.	3. Call for authorized service.
2. A single headset hears static.	1. Headset is not programmed to same channel as base station.	1. Reprogram the headset with the programming cable.
3. A single headset hears static. Programming cable has no effect.	1. Defective programming cable.	1. Try to program other headsets with the same cable. If they won't program, replace the cable.
	2. Defective headset.	2. If the other headsets program OK, the single headset needs repair.
4. A single headset is dead. No static is heard.	1. The headset is not turned on.	1. Press the ON button.
	2. The battery is discharged.	2. Replace the battery with a fully charged one.
	3. The headset is defective.	3. Call for authorized service.
5. No vehicle alert tone in headset.	1. No power to the vehicle detector.	1. Plug the vehicle detector into power outlet or replace the detector fuse.
	2. Vehicle detector is "locked up."	2. Remove power to vehicle detector for a few seconds to reset the detector.
	3. The base station alert tone volume is set too low.	3. Adjust alert tone volume.

6. All headsets will not go into Standby (silence) when the vehicle leaves the menu sign.	1. This is normal when a pulse (air switch) type of vehicle detector is used. 2. There is a large metal object near the loop in the driveway (if a loop is used). 3. The Loop detector is "locked up." 4. Defective vehicle detector.	1. Press the Page switch to silence the menu microphone. 2. Remove the object. 3. Unplug the loop detector from the AC outlet and plug it back in to reset the detector. 4. Call for authorized service.
7. Audio on all headsets cuts out or is interrupted.	1. The cause could be radio interference. These are symptoms of interference: • The operating range between the base station and the headsets gets very short, sometimes 25 feet or less. Normally you will hear nothing to indicate interference. • The Talk or Page light flickers briefly causing the system to leave standby mode, and go into listen mode with no vehicle alert heard. • The system may drop out of Talk Lock by itself. • When pressing the Channel Select button on the Base Station, the channel lights move sluggishly or not at all. 2. Loose or frayed wiring. 3. Poor location of Base Station (behind large metal objects, too far from work area, etc.).	1. Change the channel on the base station to one at least three channels away. • If using a single base station, move jumper J3 to the lane 2 position. This provides 8 additional channels from which to choose. • Locate and shut off other 900 MHz devices in the building, such as cordless phones, video and speaker systems, and video monitors. 2. Call for authorized service. 3. Relocate the Base Station, or add an additional Base Station to extend the range of the system.

8. No Talk or listen from the menu sign when using the backup wired intercom. The C960 system works OK.	1. The base station is turned on. 2. No power to the backup intercom. 3. The volume controls are set too low on the backup intercom. 4. Defective backup intercom or wiring.	1. Turn the base station OFF. 2. Turn the backup intercom on or plug in its power transformer. 3. Turn the volume controls up. 4. Call for authorized service.
9. No Talk or Page to other headsets from a single headset, or Talk or Page buttons require excessive pressure to operate.	1. Dirt or grease under Talk or Page Switch. 2. Worn or defective Talk or Page switch. 3. Defective headset.	1. Call for authorized service. 2. Call for authorized service. 3. Call for authorized service.
10. Low Talk volume on a single headset.	1. The holes in front of the microphone are plugged with dirt or grease. 2. Operator is not positioning the microphone correctly. 3. Defective headset.	1. Call for authorized service. 2. Refer to Operating Guide. 3. Call for authorized service.
11. Louder Talk volume or feedback from a single headset.	1. The holes in back of the microphone are plugged with dirt or grease.	1. Call for authorized service.
12. Constant programming tones heard on a single headset. Programming cable has no effect.	1. Defective headset.	1. Call for authorized service.
13. The "hands free" function does not work.	1. The Talk Lock button is not enabled on the headset. 2. The system is operating in Standard mode.	1. Refer to the Operating Instructions to enable Talk Lock. 2. Talk Lock is disabled in Standard mode.

Battery and Battery Charger Troubleshooting

Problem	Possible Cause	Solution
1. No lights come on when a battery is inserted into charger.	1. Dirty contacts on battery or charger.	1. Clean contacts on battery and charger with an alcohol moistened swab.
	2. No power to charger.	2. Make sure power transformer is plugged into charger and a "live" outlet.
	3. Defective battery.	3. Try a known good battery.
	4. Defective charger.	4. Call for authorized service.
2. Short battery life.	1. Worn out batteries.	1. Replace battery.
	2. The battery needs to be conditioned because it was repeatedly removed from the headset before the low battery alert sounded.	2. Condition the battery.
	3. Wrong type of power transformer used for charger.	3. Make sure power transformer is marked "Secondary Voltage 14 VAC."
3. The orange light comes on when a battery is inserted into the charger.	1. Defective battery.	1. Replace the battery.
4. The green light on the charger never comes on.	1. Defective battery.	1. Replace the battery.

Service

Most, if not all, C960 system service needs can be fulfilled by your local 3M dealer. If special service assistance is needed, however, or for information on how to properly dispose of your non–functional C960 rechargeable batteries, please call **1–800–328–0033.**

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APPENDIX III – RELATED PROCEEDINGS APPENDIX

None.